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**APPENDIX B**

Constructed Wetland Demonstration Design Drawings (On CD)

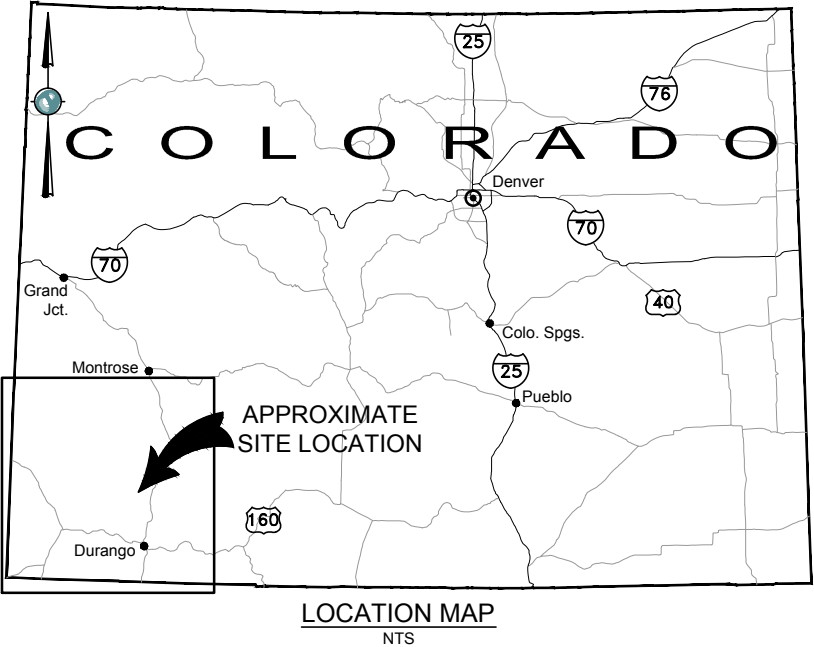
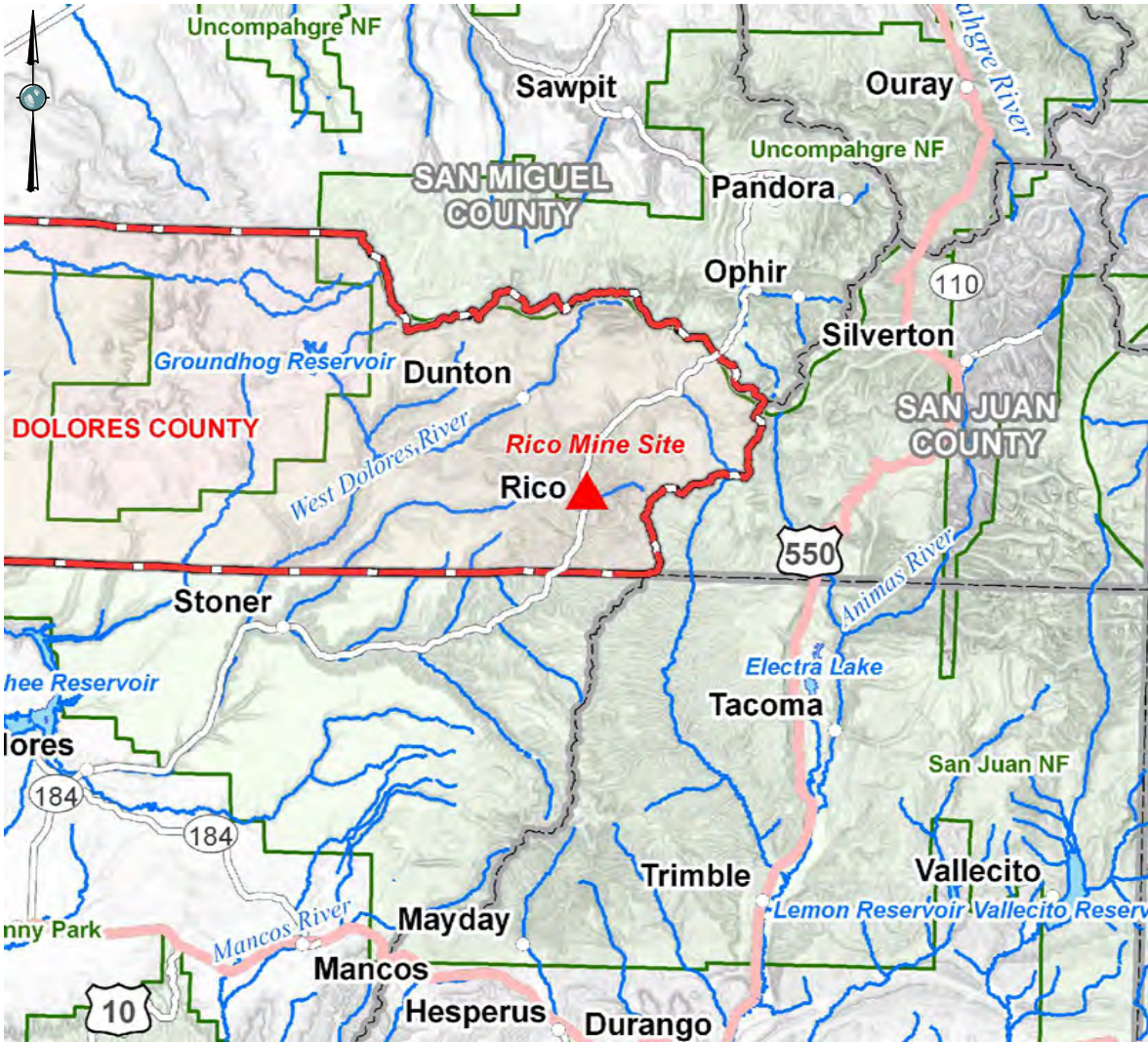
# RICO - ARGENTINE MINE SITE

## CONSTRUCTED WETLAND DEMONSTRATION

### DOLORES COUNTY, COLORADO

SHEET LIST:

- 1. COVER SHEET
- 2. NOTES AND ABBREVIATIONS
- 3. MATERIALS LIST (SHEET 1 OF 2)
- 4. MATERIALS LIST (SHEET 2 OF 2)
- 5. GENERAL ARRANGEMENT
- 6. PROCESS FLOW DIAGRAM
- 7. PIPING DEMOLITION PLAN
- 8. GRADING AND DRAINAGE PLAN
- 9. MONITORING PLAN
- 10. STANDALONE SURFACE FLOW WETLAND PLAN
- 11. SETTLING BASIN NO. 2 PLAN
- 12. SETTLING BASIN NO. 1 PLAN
- 13. POLISHING SURFACE FLOW WETLAND PLAN
- 14. SUBSURFACE FLOW WETLAND PLAN
- 15. AERATION CHANNEL PLAN
- 16. ROCK DRAIN PLAN
- 17. OUTFALL PLAN
- 18. TREATMENT SYSTEM ACCESS ROAD PLAN AND PROFILE
- 19. STORM DRAIN PLAN AND PROFILE
- 20. HYDRAULIC PROFILE - TREATMENT SYSTEM
- 21. HYDRAULIC PROFILE- SB NO.2, STANDALONE SF WETLAND, BYPASS TO POND 18
- 22. SURFACE FLOW WETLANDS SECTIONS
- 23. SETTLING BASINS NO. 1 & NO. 2 TYPICAL SECTIONS
- 24. SETTLING BASINS NO. 1 & NO. 2 DETAILS
- 25. SUBSURFACE FLOW WETLAND SECTIONS
- 26. SUBSURFACE FLOW WETLAND DETAILS
- 27. AERATION CHANNEL SECTIONS
- 28. AERATION CHANNEL DETAILS
- 29. ROCK DRAIN SECTIONS
- 30. ROCK DRAIN DETAILS
- 31. SECTIONS AND DETAILS SHEET (SHEET 1 OF 6)
- 32. SECTIONS AND DETAILS SHEET (SHEET 2 OF 6)
- 33. SECTIONS AND DETAILS SHEET (SHEET 3 OF 6)
- 34. SECTIONS AND DETAILS SHEET (SHEET 4 OF 6)
- 35. SECTIONS AND DETAILS SHEET (SHEET 5 OF 6)
- 36. SECTIONS AND DETAILS SHEET (SHEET 6 OF 6)
- 37. ELECTRICAL CONDUIT PLAN
- 38. ELECTRICAL ONE-LINE DRAWING



Plot Date: 06/28/13 - 1:35pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Cover Sheet.dwg

REFERENCES:		NO.	REVISION	DATE	APRVD	DRAWN	MGC	<div>amc</div> <div>10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
PLANS		1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KMW		SCALE: NTS		SHEET: 1 OF 38	
DATUM		2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF		COVER SHEET		PROJ No:	
						REVIEWED	RJB				SA11161315	
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Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Notes Sheet.dwg

NOTES:

1.

ALL PIPES TO BE INSTALLED AS 3" SCH 80 PVC, UNLESS OTHERWISE NOTED
2.

DATUM UTM ZONE 12S, FEET, NAD83
3.

ELEVATIONS ARE PRESENTED AS FEET ABOVE MEAN SEA LEVEL
4.

CONTROL POINT 03 (FOLEY)  
N: 1388956.46  
E: 2267960.06  
Z: 8845.24
5.

FIELD FIT HORIZONTAL BENDS AS NECESSARY
6.

GEOGRID MAY BE REQUIRED DURING CONSTRUCTION TO STABILIZE EXISTING CONDITIONS. SEE TECHNICAL SPECIFICATIONS.
7.

EXISTING ACCESS ROAD TO REMAIN OPEN AND MAINTAINED DURING CONSTRUCTION. TEMPORARY CLOSURES TO THE EXISTING ACCESS MUST BE COORDINATED WITH ANDERSON. IMPACTS TO THE EXISTING ACCESS ROAD MUST BE REPAIRED WITH COMPACTED CLASS 6 GRADED TO MATCH EXISTING GRADE.
8.

THE ST. LOIS CHANNEL SHALL REMAIN FUNCTIONAL AND UNIMPACTED DURING CONSTRUCTION.
9.

ALL EQUIPMENT, MATERIALS, AND SUPPLIES MUST BE PURCHASED PER THE MATERIALS LIST. ANY SUBSTITUTIONS MUST BE PRE-APPROVED, IN WRITING, BY THE ENGINEER
10.

EXISTING STRUCTURES AND TOPOGRAPHY ARE BASED ON A COMPILATION OF AERIAL IMAGERY, SURVEY AND FIELD VISITS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS.
11.

IF CALCINES ARE ENCOUNTERED DURING EXCAVATION, CALCINES SHALL BE SEGREGATED AND STORED IN A SEPARATE AREA IN THE LAYDOWN AS SPECIFIED BY ANDERSON.
12.

IF POND SEDIMENTS, UNSUITABLE FOR USE AS BACKFILL MATERIAL, ARE ENCOUNTERED THEY SHALL BE SEGREGATED AND STORED IN A SEPARATE AREA IN THE LAYDOWN AS SPECIFIED BY ANDERSON.

ABBREVIATIONS:

APPROX. = APPROXIMATELY  
BOM = BOTTOM OF MATRIX  
BP = ALIGNMENT BEGINNING  
BVCE = VERTICAL TANGENT - CURVE INTERSECT ELEVATION  
BVCS = VERTICAL TANGENT - CURVE INTERSECT STATION  
CPVC = CLEAR POLYVINYL CHLORIDE  
CHDPE = CORRUGATED HIGH DENSITY POLYETHYLENE  
DIA. = DIAMETER  
EP = ALIGNMENT END  
EVCE = VERTICAL CURVE - TANGENT INTERSECTION ELEVATION  
EVCS = VERTICAL CURVE - TANGENT INTERSECTION STATION  
FNPT = FEMALE NATIONAL PIPE THREAD  
GPM = GALLONS PER MINUTE  
H = HEIGHT  
HDG = HOT DIPPED GALVANIZED  
HDPE = HIGH DENSITY POLYETHYLENE  
INVERT = BOTTOM OF PIPE/FLOW LINE  
K = CURVE COEFFICIENT  
L = LENGTH  
LB = BOUND  
LVC = LENGTH OF VERTICAL CURVE  
MAX. = MAXIMUM  
MIL = MILLIMETER  
MIN. = MINIMUM  
NO. = NUMBER  
O.C. = ON CENTER  
O.D. = OUTER DIAMETER  
OZ = OUNCE  
PC = POINT OF CURVATURE  
PERF. = PERFORATED PIPE  
PT = POINT OF TANGENCY  
PVC = POLYVINYL CHLORIDE  
PVI = POINTS OF VERTICAL INTERSECTION  
S = SLOPE  
SS = STAINLESS STEEL  
SB = SETTLING BASIN  
SCH = SCHEDULE  
SF = SURFACE FLOW  
SSF = SUBSURFACE FLOW  
STA = STATION  
TEMP = TEMPERATURE  
TOB = TOP OF BERM (TOP OF FREEBOARD)  
TOM = TOP OF MATRIX  
TYP. = TYPICAL  
V = VOLT  
W = WIDTH  
WCS = WATER CONTROL STRUCTURE  
WSE = WATER SURFACE ELEVATION

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____KMW	<div> 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KMW				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF				SHEET: 2 OF 38	
					REVIEWED_____RJB		NOTES AND ABBREVIATIONS		PROJ No:	2
									SA11161315	



Plot Date: 07/01/13 - 12:23pm, Plotted by: joseph.markham  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Materials Sheet.dwg

UNIT PROCESS	EQUIPMENT / MATERIALS
CONCRETE FLOW DIVERSION BOX	4' L X ' W X 3' H PRECAST CONCRETE INLET BOX WITH LID AND INTERNAL WEIR
	AGGREGATE BEDDING
	15" SCH 80 PVC PIPE
	18" SCH 80 PVC PIPE
	LINK-SEAL MODULAR SEALS
	MISC. 15" SCH 80 PVC FITTINGS
	MISC. 18' SCH 80 PVC FITTINGS
SB NO.2	32" L X 42" W X 21" H PRECAST CONCRETE BOX WITH WEIR OPENING WITH LID
	4" DIA. HDPE BLACK UV STABILIZED INSULATING BALLS
	9' LONG 6" DIA. HOLLOW GALVANIZED STEEL POSTS
	6' H CHAIN LINK FENCE
	6" DIA. GALVANIZED STEEL END CAP
	3/8" HDG BALLAST CHAIN
	3/8" SS ANCHOR CABLE
	6" SCH 40 PVC PERF. PIPE 3/8" HOLES AT 120° EVERY 3"
	45° RADIUS SWEEP
	22° RADIUS SWEEP
	6" SCH 80 PVC PIPE
	6" X 6" X 6" SCH 80 TEE
	6" X 3" REDUCERS
	3" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	12" DIA. PLASTIC VALVE BOX WITH LID
SF WETLAND	6" SCH 40 PVC PERF. PIPE
	3" - 6" DIA. WASHED ROUND ROCK
	TOPSOIL
	SEDGES
	45° RADIUS SWEEP
	6" SCH 80 PVC PIPE
	6" X 3" SCH 40 PVC REDUCERS
	6" SCH 40 PVC END CAPS
	3" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	AGRIDRAIN INLINE WCS 5' H X 8" W X 10" D - 6" DIA. FLEXIBLE COUPLER WITH FITTINGS
	5" AND 7" REMOVABLE STOPLOGS

UNIT PROCESS	EQUIPMENT / MATERIALS
SB NO.1	32" L X 42" W X 21" H PRECAST CONCRETE BOX WITH WEIR OPENING WITH LID
	4" DIA. HDPE BLACK UV STABILIZED INSULATING BALLS
	6' H CHAIN LINK FENCE
	9' LONG 6" DIA. HOLLOW GALVANIZED STEEL ANCHOR POSTS
	6" DIA. GALVANIZED STEEL END CAP
	3/8" HDG BALLAST CHAIN
	3/8" SS ANCHOR CABLE
	8130 XR-5 FLOATING BAFFLE, 21' L, 6' D
	6" FLOAT
	6" SCH 40 PVC PERF. PIPE 3/8" HOLES AT 120° EVERY 3"
	45° RADIUS SWEEP
	22° RADIUS SWEEP
	6" SCH 80 PVC PIPE
	6" x 6" x 6" SCH 80 TEE
	6" x 3" SCH 80 PVC REDUCER
	3" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	12" DIA. PLASTIC VALVE BOX WITH LID
	AGRIDRAIN INLINE WCS 5' H X 8" W X 10" D - 6" DIA. FLEXIBLE COUPLER WITH FITTINGS
	5" AND 7" REMOVABLE STOPLOGS
POLISHING SF WETLAND	6" SCH 40 PVC PERF. PIPE
	3" - 6" DIA. WASHED ROUND ROCK
	TOPSOIL
	SEDGES
	6" SCH 80 PVC PIPE
	6" X 3" SCH 40 PVC REDUCERS
	6" SCH 40 PVC END CAPS
	3" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	12" DIA. PLASTIC VALVE BOX WITH LID
	AGRIDRAIN INLINE WCS 5' H X 8" W X 10" D - 6" DIA. FLEXIBLE COUPLER WITH FITTINGS
	5" AND 7" REMOVABLE STOPLOGS

UNIT PROCESS	EQUIPMENT / MATERIALS
SSF WETLAND	12" SCH 40 PVC PERF. PIPE
	12" SCH 40 END CAPS
	3" X 3" X 3" SCH 40 PVC TEE
	3" X 12" SCH 40 PVC REDUCER
	3" - 6" DIA. WASHED ROUNDED ROCK
	60 MIL HDPE VERTICAL BAFFLE
	1" - 2" WASHED FIR AND PINE WOOD CHIPS
	1.5" DIA. WASHED ROUNDED ROCK
	SHEEP MANURE, PREMIUM AMENDMENT (60% MANURE AND 40% COMPOSTED ASPEN FINES)
	SULFUR PRILL
	ALASKA FISH FERTILIZER
	CATTAILS
	4" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	12" DIA. PLASTIC VALVE BOX WITH LID
	4" SCH 80 PVC PIPE
	6" X 4" SCH 40 PVC REDUCER
	6" SCH 40 PVC ELBOW
	6" SCH 40 PVC PERF. PIPE
	6" SCH 40 PVC END CAP
AERATION CHANNEL	3" - 6" DIA. WASHED ROUNDED ROCK
	CUSTOM AGRIDRAIN WCS 8' H X 2' W X 1.5' D - 4" DIA. FLEXIBLE COUPLER WITH FITTINGS
	5" AND 7" REMOVABLE STOPLOGS
	DURAPAC VF48 VERTICAL UPFLOW MEDIA
	3" TRUE UNION 2000 PVC BALL VALVE WITH EXTENSION KIT
	1" SCH 80 PVC EXTENSION PIPE
	EXTENSION KIT VALVE HANDLE
	12" DIA. PLASTIC VALVE BOX WITH LID
	12" SCH 80 PVC
	1/4" HDPE OR VINYL SCREEN
	4.5' L X 3.5' W X 4' H PRECAST CONCRETE BOX
	1.5' L X 2.5' W POLYETHYLENE GRATE
ROCK DRAIN	6" SCH 40 PVC PERF. PIPE
	6" X 3" SCH 40 PVC REDUCERS
	6" SCH 40 PVC END CAPS
	1" - 1.5" DIA. WASHED ANGULAR LIMESTONE
	4" DIA. HDPE BLACK UV STABILIZED INSULATING BALLS
	AGRIDRAIN INLINE WCS 6' H X 8" W X 10" D - 6" DIA. FLEXIBLE COUPLER WITH FITTINGS
	5" AND 7" REMOVABLE STOPLOGS

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	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF				SHEET: 3 OF 38		
	DATUM						REVIEWED_____RJB	MATERIALS LIST (SHEET 1 OF 2)		PROJ No:	3
										SA11161315	



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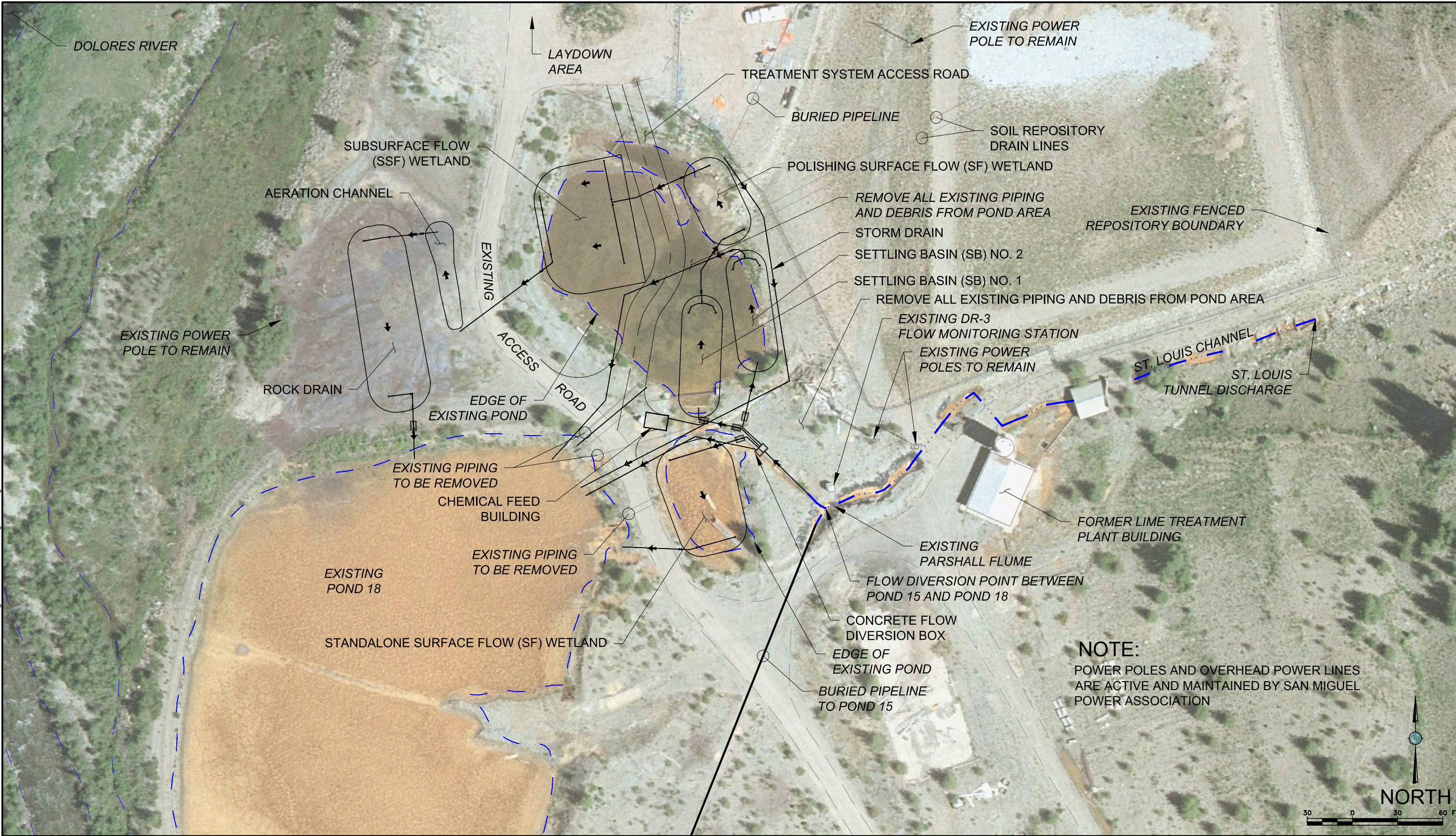
UNIT PROCESS	EQUIPMENT / MATERIALS
SYSTEM OUTFALL WITH POND 18	6 - 8" DIA. ROUNDED ROCK
CHEMICAL FEED BUILDING / CHEMICAL FEED SYSTEM	15' X 10' TUFF SHED SR-600 WITH WINDOW AND THERMAL INSULATION
	CLASS 6 ROAD BASE
	MR88 SOIL ANCHORS
	2" SCH 80 PVC PROTECTIVE PIPING
	4' L X 2' W X6' H CABINET
	53" L X 8" W 22-GAL CAPACITY DRUM LOW PROFILE SPILL DECK
	55-GAL DRUM SECONDARY CONTAINMENT WITH RAMP
	SECONDARY CONTAINMENT RAMP
	PROMINENT DULCODOS PANEL METERING SYSTEM
	MIKRO DELTA PRECISION PISTON METERING PUMP
	CHEMICAL RESISTANT TUBING
	150 LB. RAISED FACE VAN STONE PVC FLANGES
	3" SCH 80 PVC OR CPVC KOFLOW LOW PRESSURE LOSS STATIC MIXER
	1/4" - 2" DIA. FNPT INJECTION PORT

UNIT PROCESS	EQUIPMENT / MATERIALS
ELECTRICAL	COMMERCIAL ELECTRIC WALL HEATER
	24V DC POWER PANEL FOR FLOWMETERS
	2 POLE 30 AMP CIRCUIT BREAKER FOR EXISTING PANELBOARD
	20 AMP GFCI RECEPTACAL AND GANG BOX
	INCANDESCENT LIGHT SOCKET WITH 100 WATT BULB
	LIGHT SWITCH WITH GANG BOX
	12 GAUGE GREEN THHN ELECTRICAL WIRE
	12 GAUGE WHITE THHN ELECTRICAL WIRE
	12 GAUGE RED THHN ELECTRICAL WIRE
	14 GAUGE GREEN THHN ELECTRICAL WIRE
	14 GAUGE WHITE THHN ELECTRICAL WIRE
	14 GAUGE RED THHN ELECTRICAL WIRE
	8 GAUGE GREEN THHN ELECTRICAL WIRE
	8 GAUGE WHITE THHN ELECTRICAL WIRE
	8 GAUGE BLACK THHN ELECTRICAL WIRE
	10 GAUGE BARE COPPER ELECTRICAL WIRE
	1/2" FLEXIBLE PVC ELECTRICAL CONDUIT
	1/2" SCH 40 PVC ELECTRICAL CONDUIT
	1" SCH 40 PVC ELECTRICAL CONDUIT
	2" SCH 40 PVC ELECTRICAL CONDUIT
	MISC. ELECTRICAL CONDUIT FITTINGS
	5/8"X10' COPPER GROUNDING RODS
	120/240 VAC, 12 CIRCUIT MIN, SURFACE MOUNT PANELBOARD WITH 2 POLE 30 AMP MAIN CIRCUIT BREAKER
	2 POLE, 20 AMP CIRCUIT BREAKER
	1 POLE, 20 AMP CIRCUIT BREAKER
	1 POLE, 15 AMP CIRCUIT BREAKER
	120 VAC TO 24V DC POWER PANEL FOR FLOWMETERS
LINER	60 MIL HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE LINER
	SS BANDING AND SEALS
	12-OZ NON-WOVEN GEOTEXTILE
FLOW MONITORING	2" DIA. TOSHIBA ELECTROMAGNETIC FLOWMETER
	SS GROUNDING RINGS
	PIPE SUPPORTS
	3" SCH 80 PVC BALL VALVE
	3" SCH 80 GATE VALVE
	3" X 2" SCH 80 REDUCER BUSHINGS
	3" X 2" SCH 80 REDUCER COUPLINGS
	3" SCH 80 FLANGES
	2" SCH 80 PIPE
	5'L X 3'W X 4'H PRECAST CONCRETE BOX

UNIT PROCESS	EQUIPMENT / MATERIALS
SAMPLING / MONITORING	4" SCH 40 PVC SCREEN WITH 0.1" MACHINE SLOTS
	4" SCH 40 PVC PIPE
	4" SCH 40 PVC END CAPS
	48" TEMPERATURE PROFILE PROBE WITH 70' LEAD WIRE LENGTH
	36" TEMPERATURE PROFILE PROBE WITH 70' LEAD WIRE LENGTH
	NEMA 4X SS ENCLOSURE 36" H X 24" W X 10" D
	NEMA 4X SS ENCLOSURE 24" H X 12" W X 8" D
	2" SCH 80 PVC PERF. PIPE
	2" SCH 80 PVC END CAP
	2" SCH 80 PVC 36" RADIUS SWEEPS
	2" SS OR PVC PIPE CLAMPS
	MIFAB CXM RUBBER PIPE SUPPORTS
	3/16" SS CABLE
	1" SS EYE HOOKS
	2.5" DIA. GALVANIZED POSTS
	QUICKCRETE
UTILITY MODIFICATION	4' DIA. MANHOLES
	42" L X 42" W X 96" H REINFORCED CONCRETE STORM DRAIN INLET BOX
	42" L X 42" W X 66" H REINFORCED CONCRETE STORM DRAIN INLET BOX
	STORM DRAIN TRASH RACKS
	24" CHDPE PIPE WITH FITTINGS
TRENCH BACKFILL	CLASS B BEDDING
	RIGID FOAM INSULATION
TREATMENT SYSTEM ROAD / ACCESS PATH	CLASS 6 ROAD BASE
	12" DIA. CHDPE PIPE WITH FITTINGS
MISCELLANEOUS CONSTRUCTION MATERIAL	CONCRETE
	SILT FENCE
	STRAW WATTLES
	CLASS 6 ROAD BASE
PIPE / FITTINGS BETWEEN STRUCTURES	3" SCH 80 PVC PIPE
	4" SCH 80 PVC PIPE
	MISC. 3" SCH 80 OR SCH 40 PVC FITTINGS

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					REVIEWED_____RJB		MATERIALS LIST (SHEET 2 OF 2)		PROJ No:	4
									SA11161315	
DATUM										



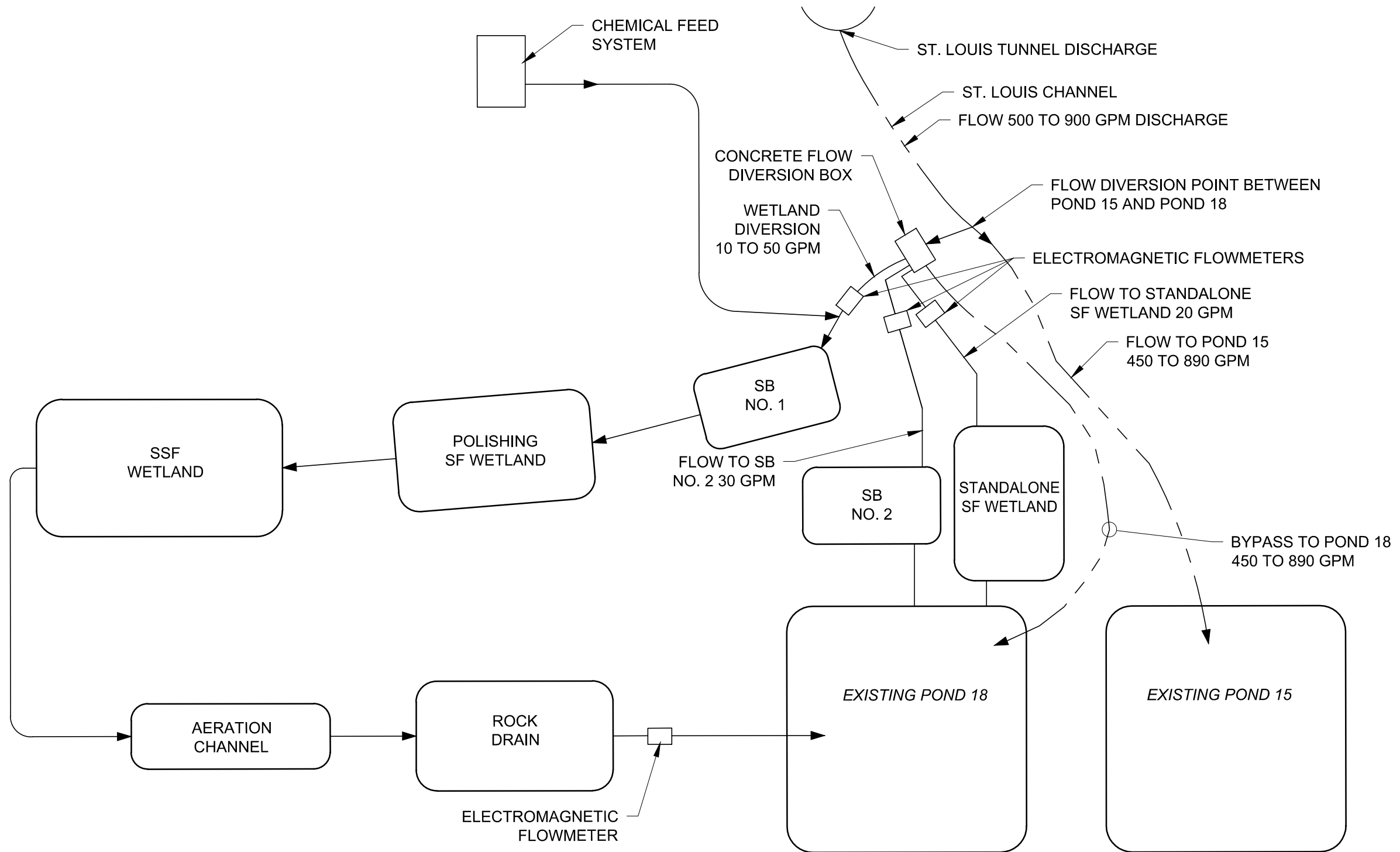


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					REVIEWED	RJB				PROJ No:	5
										SA11161315	
DATUM											

Plot Date: 06/28/13 - 1:35pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Arrangement.dwg



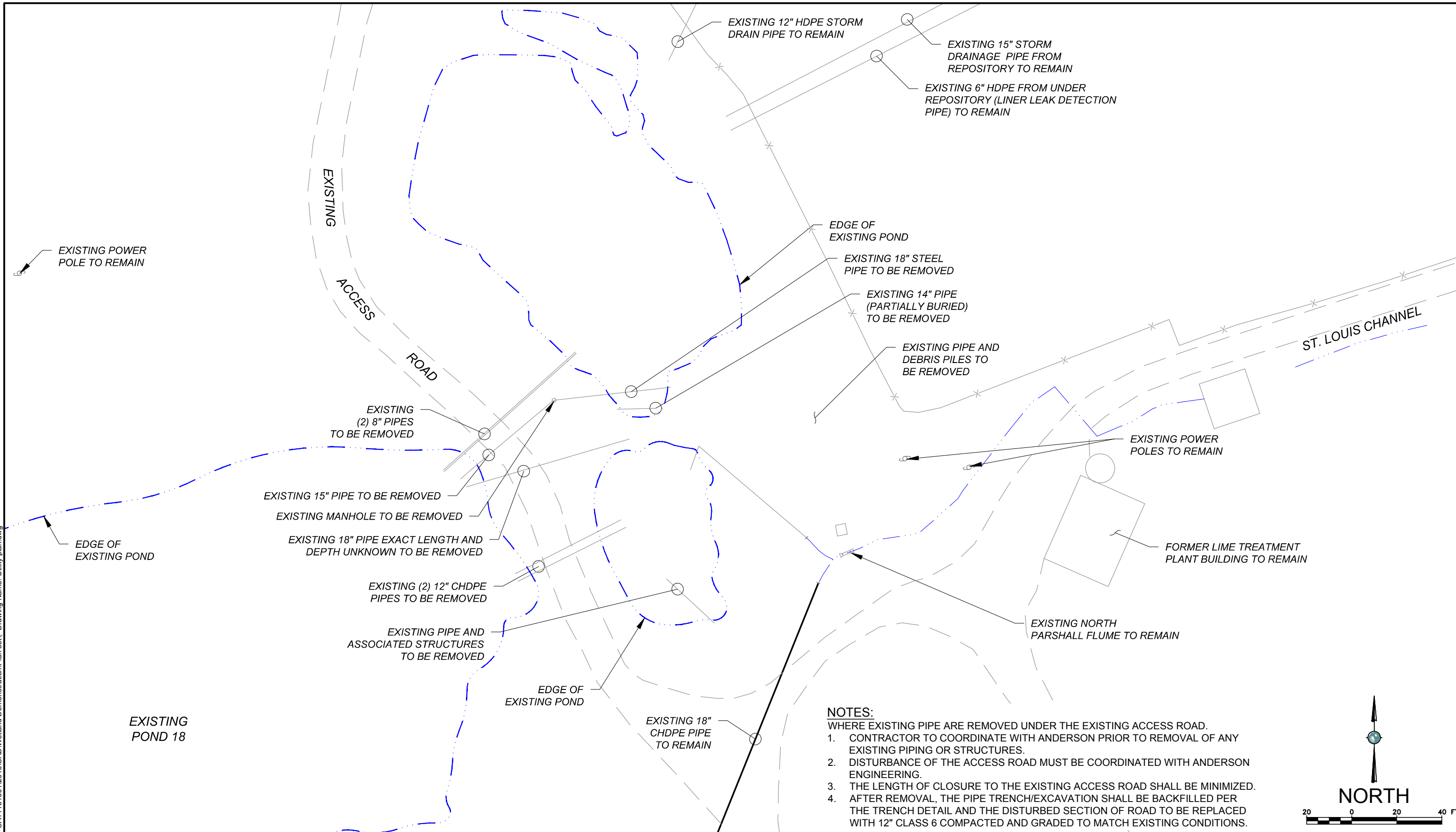
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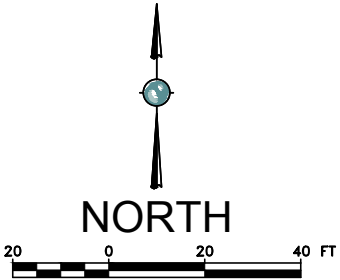
NOT TO SCALE

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW	<b>amec</b> 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	DATE: 05/31/13	
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					REVIEWED	RJB				
DATUM								PROCESS FLOW DIAGRAM	PROJ No: SA11161315	6



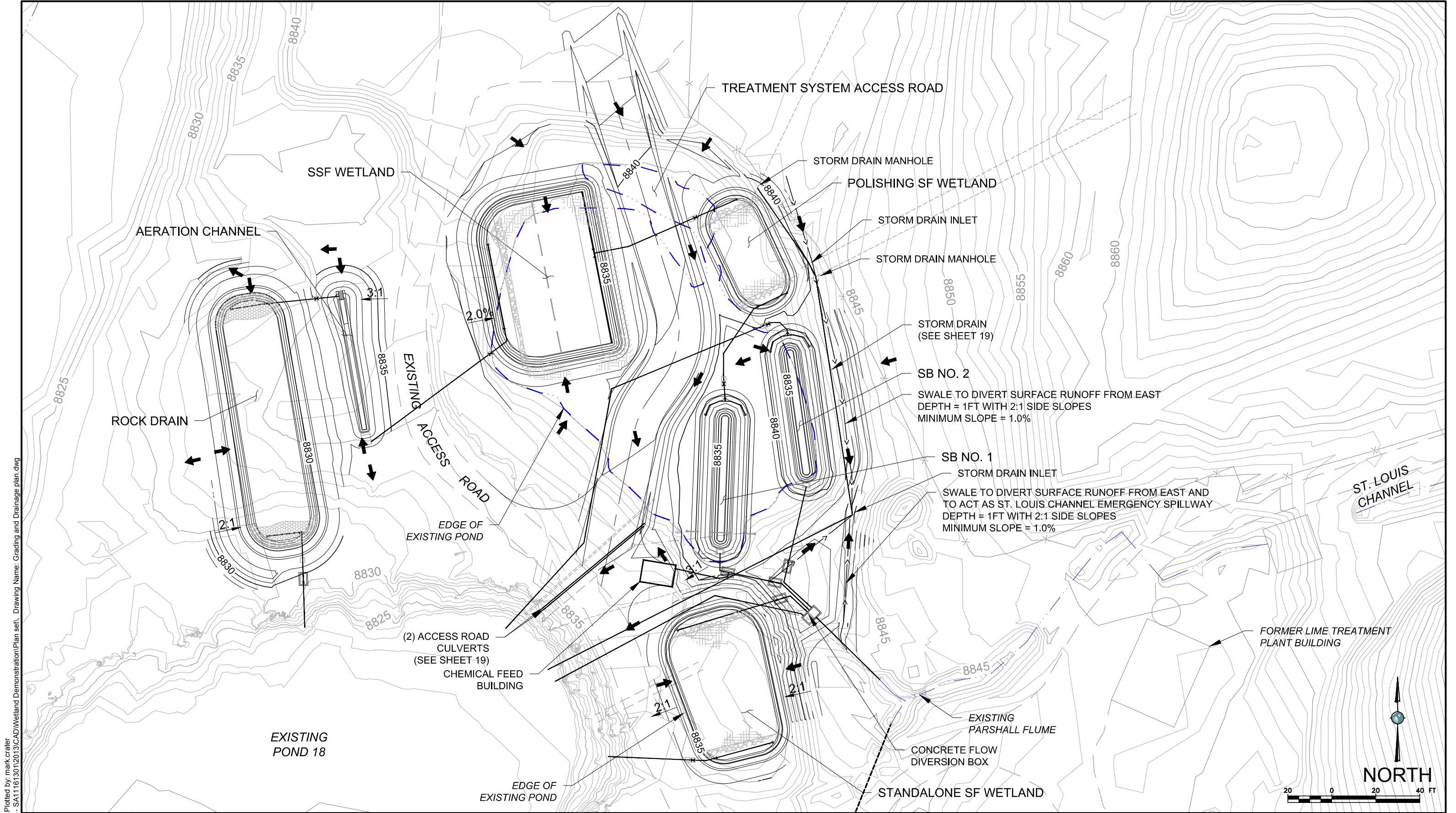


- NOTES:**  
WHERE EXISTING PIPE ARE REMOVED UNDER THE EXISTING ACCESS ROAD.
1. CONTRACTOR TO COORDINATE WITH ANDERSON PRIOR TO REMOVAL OF ANY EXISTING PIPING OR STRUCTURES.
  2. DISTURBANCE OF THE ACCESS ROAD MUST BE COORDINATED WITH ANDERSON ENGINEERING.
  3. THE LENGTH OF CLOSURE TO THE EXISTING ACCESS ROAD SHALL BE MINIMIZED.
  4. AFTER REMOVAL, THE PIPE TRENCH/EXCAVATION SHALL BE BACKFILLED PER THE TRENCH DETAIL AND THE DISTURBED SECTION OF ROAD TO BE REPLACED WITH 12" CLASS 6 COMPACTED AND GRADED TO MATCH EXISTING CONDITIONS.



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	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ KF				SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		PIPING DEMOLITION PLAN		SHEET: 7 OF 38	
					REVIEWED _____ RJB				PROJ No:	7
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Plot Date: 06/28/13 - 1:36pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Utility plan.dwg

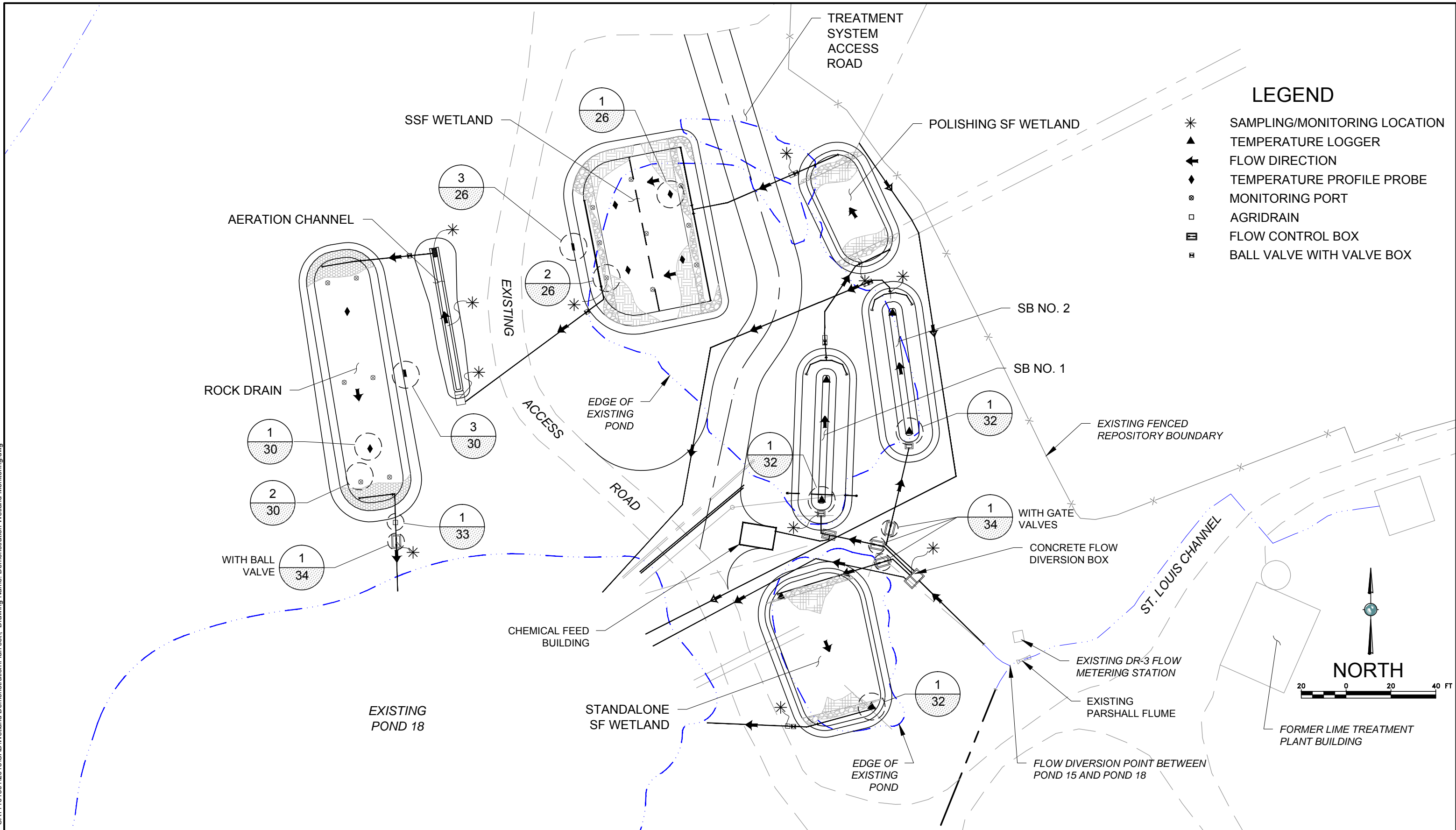


Plot Date: 06/28/13 - 1:36pm, Plotted by: mark crater  
Drawing Path: P:\Project\RICO - SA111613012013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Grading and Drainage plan.dwg

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	KF	<div>amc</div> <div>10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF				SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF		GRADING AND DRAINAGE PLAN		SHEET: 8 OF 38	
					REVIEWED	RJB				PROJ No:	8
										SA11161315	
DATUM											

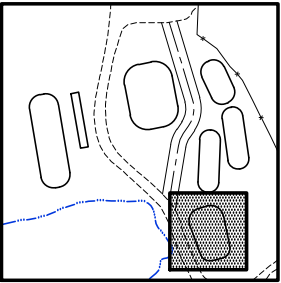
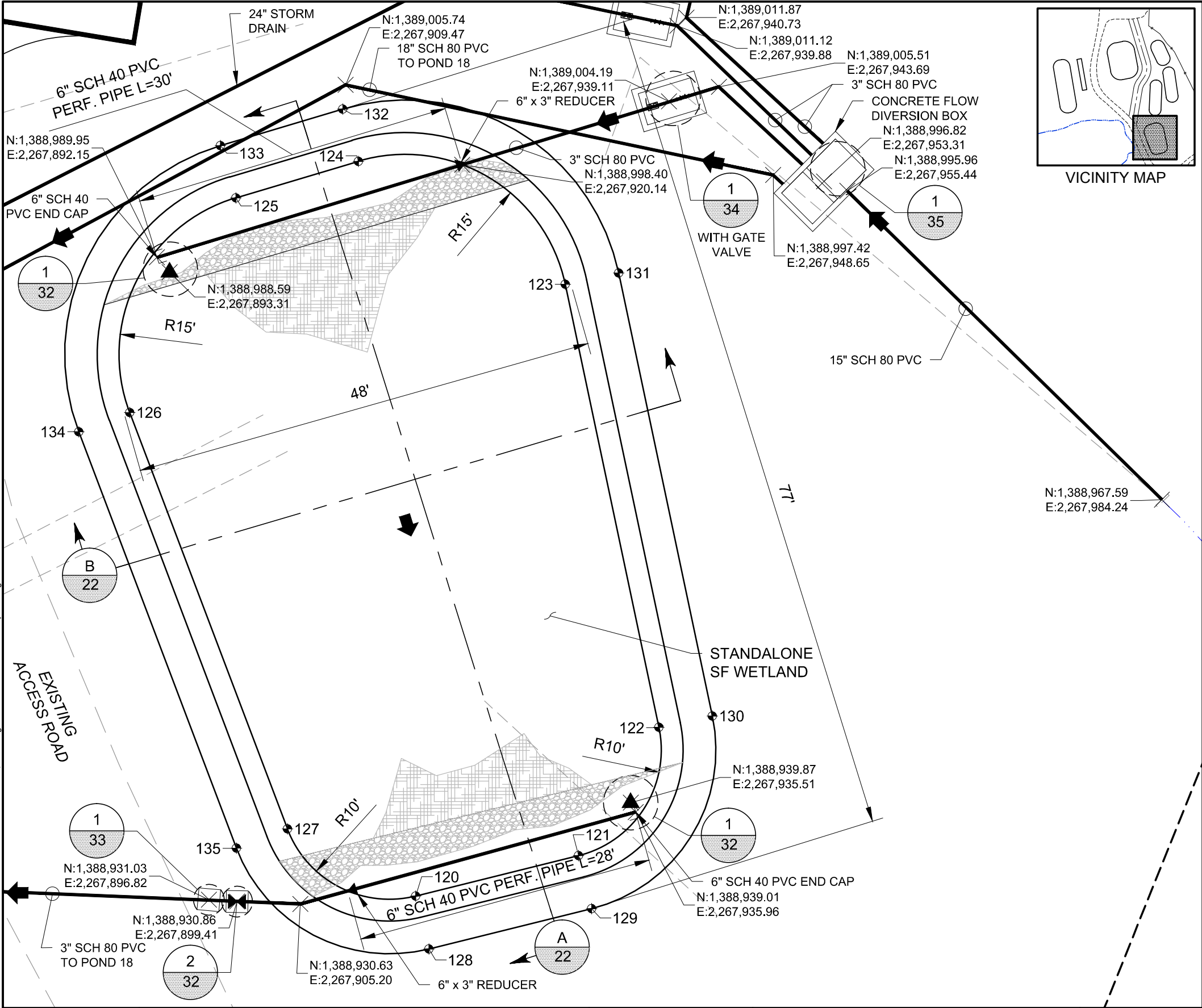


Plot Date: 06/28/13 - 1:36pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Demonstration Wetland Monitoring.dwg



REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	<div>amc</div> <div>10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ ARC				SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		MONITORING PLAN		SHEET: 9 OF 38	
					REVIEWED _____ RJB				PROJ No: SA11161315	9





VICINITY MAP

LEGEND

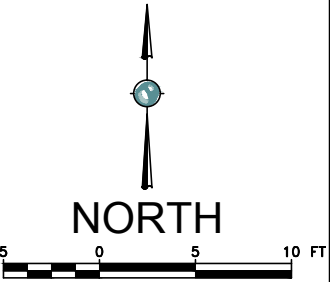
- ▲ TEMPERATURE LOGGER
- ➔ FLOW DIRECTION
- ⊕ FINAL GRADING POINT
- ⋈ BALL VALVE

FINAL GRADING POINT TABLE

POINT #	NORTHING	EASTING	ELEV.	DESC.
120	1,388,931.34	2,267,915.79	8833.50	BOM
121	1,388,935.02	2,267,930.72	8833.50	BOM
122	1,388,946.78	2,267,938.11	8833.50	BOM
123	1,388,987.43	2,267,929.58	8833.50	BOM
124	1,388,998.72	2,267,910.63	8833.50	BOM
125	1,388,995.39	2,267,899.40	8833.50	BOM
126	1,388,975.72	2,267,889.64	8833.50	BOM
127	1,388,937.52	2,267,904.04	8833.50	BOM
128	1,388,926.48	2,267,916.98	8836.50	TOB
129	1,388,930.16	2,267,931.91	8836.50	TOB
130	1,388,947.81	2,267,943.00	8836.50	TOB
131	1,388,988.45	2,267,934.47	8836.50	TOB
132	1,389,003.52	2,267,909.20	8836.50	TOB
133	1,389,000.18	2,267,897.98	8836.50	TOB
134	1,388,973.96	2,267,884.96	8836.50	TOB
135	1,388,935.76	2,267,899.36	8836.50	TOB

NOTES:

- SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
- FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
- SEE CROSS SECTIONS FOR MATRIX MATERIAL.
- SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.



Plot Date: 06/28/13 - 1:37pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Demo SF Wetland plan.dwg

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF
					REVIEWED	RJB
DATUM						

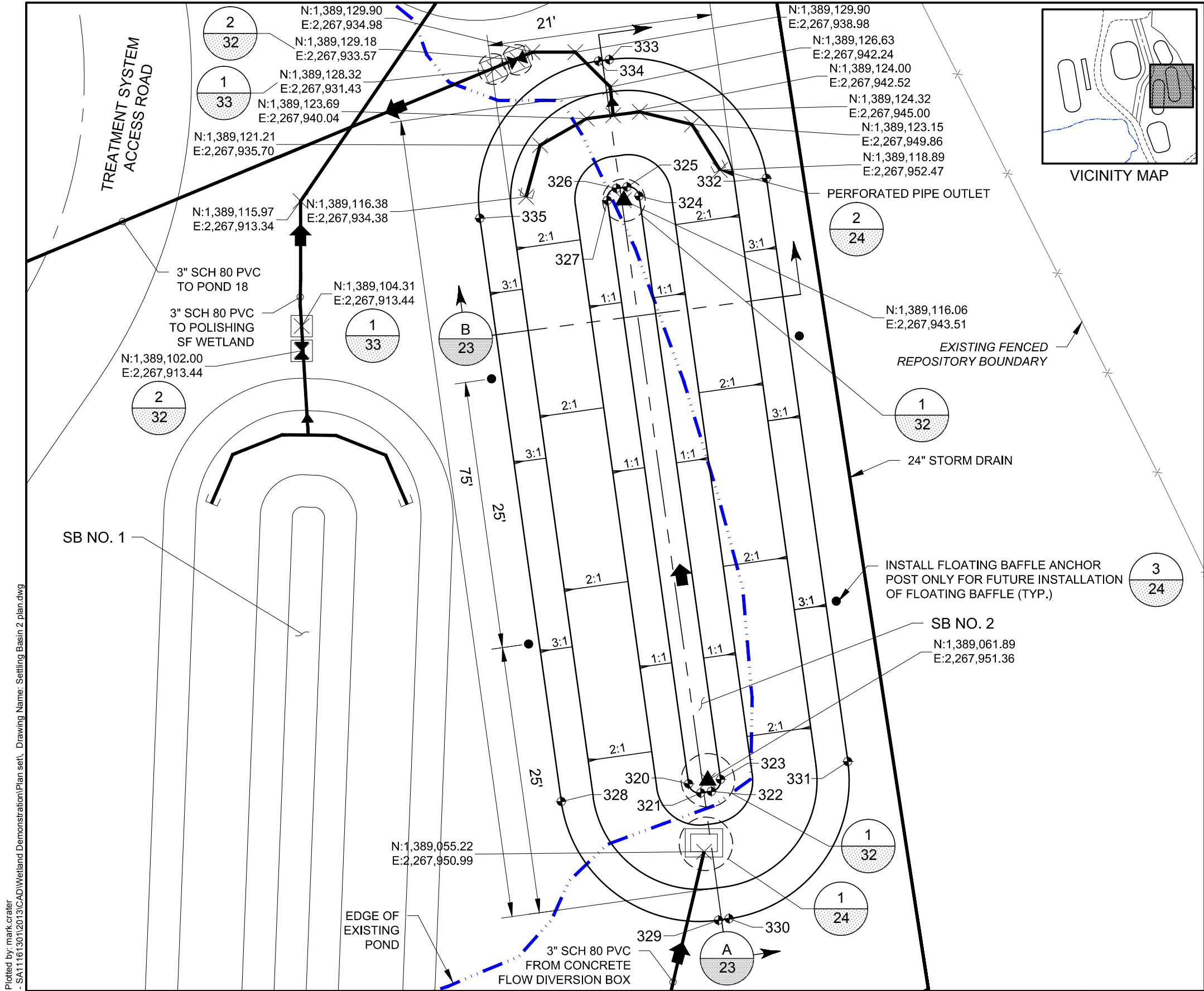


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(916) 636-3200

RICO - ARGENTINE MINE SITE  
CONSTRUCTED WETLAND DEMONSTRATION

STANDALONE SURFACE  
FLOW WETLAND PLAN

DATE: 05/31/13	
SCALE: 1" = 10'	
SHEET: 10 OF 38	
PROJ No:	10
SA11161315	



LEGEND

- ▲ TEMPERATURE LOGGER
- ➔ FLOW DIRECTION
- ⊕ FINAL GRADING POINT
- FLOATING BAFFLE ANCHOR POST
- ⋈ BALL VALVE

FINAL GRADING POINT TABLE

POINT #	NORTHING	EASTING	ELEV.	DESC.
320	1,389,061.56	2,267,949.56	8833.70	BOM
321	1,389,060.71	2,267,950.69	8833.70	BOM
322	1,389,060.85	2,267,951.68	8833.70	BOM
323	1,389,061.98	2,267,952.53	8833.70	BOM
324	1,389,116.45	2,267,944.94	8833.70	BOM
325	1,389,117.30	2,267,943.81	8833.70	BOM
326	1,389,117.17	2,267,942.82	8833.70	BOM
327	1,389,116.04	2,267,941.97	8833.70	BOM
328	1,389,059.91	2,267,937.68	8840.70	TOB
329	1,389,048.83	2,267,952.35	8840.70	TOB
330	1,389,048.96	2,267,953.34	8840.70	TOB
331	1,389,063.64	2,267,964.42	8840.70	TOB
332	1,389,118.11	2,267,956.82	8840.70	TOB
333	1,389,129.19	2,267,942.15	8840.70	TOB
334	1,389,129.05	2,267,941.16	8840.70	TOB
335	1,389,114.38	2,267,930.08	8840.70	TOB

NOTES:

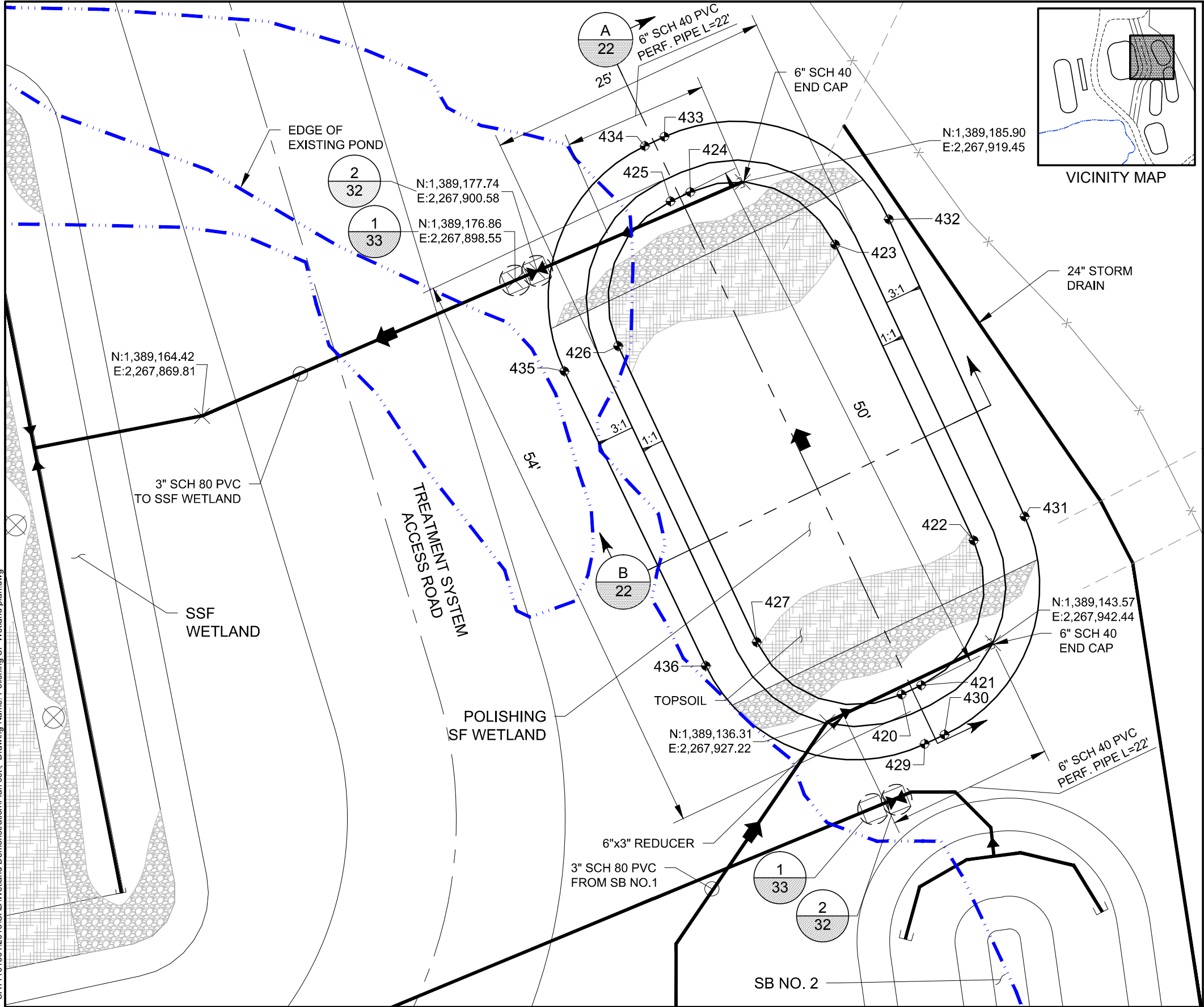
- SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
- FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
- SEE CROSS SECTIONS FOR MATRIX MATERIAL.
- PROVIDE 6' HIGH CHAIN LINK SECURITY FENCING WITH 2 - 3' WIDE GATES. LOCATE FENCE 8' FROM SB NO. 2 TOB.
- SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.



REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW	amc 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF			SCALE: 1" = 10'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF			SHEET: 11 OF 38	
					REVIEWED	RJB			PROJ No:	11
DATUM								SETTLING BASIN NO. 2 PLAN		SA11161315







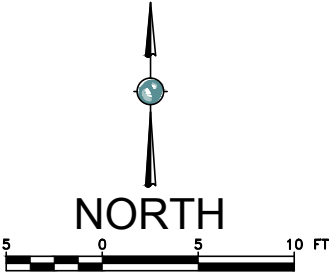
LEGEND

- FLOW DIRECTION
- MONITORING PORT
- FINAL GRADING POINT
- BALL VALVE

FINAL GRADING POINT TABLE

POINT #	NORTHING	EASTING	ELEV.	DESC.
420	1,389,138.84	2,267,934.04	8836.35	BOM
421	1,389,139.69	2,267,935.85	8836.35	BOM
422	1,389,152.99	2,267,940.67	8836.30	BOM
423	1,389,180.16	2,267,927.94	8836.20	BOM
424	1,389,184.97	2,267,914.65	8836.15	BOM
425	1,389,184.12	2,267,912.84	8836.15	BOM
426	1,389,170.83	2,267,908.02	8836.20	BOM
427	1,389,143.66	2,267,920.75	8836.30	BOM
429	1,389,134.31	2,267,936.17	8839.35	TOB
430	1,389,135.16	2,267,937.98	8839.35	TOB
431	1,389,155.18	2,267,945.34	8839.35	TOB
432	1,389,182.47	2,267,932.88	8839.35	TOB
433	1,389,190.04	2,267,912.27	8839.35	TOB
434	1,389,189.20	2,267,910.46	8839.35	TOB
435	1,389,168.51	2,267,903.09	8839.35	TOB
436	1,389,141.47	2,267,916.07	8839.35	TOB

- NOTES:
- SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
  - FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
  - SEE CROSS SECTIONS FOR MATRIX MATERIAL.
  - SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.

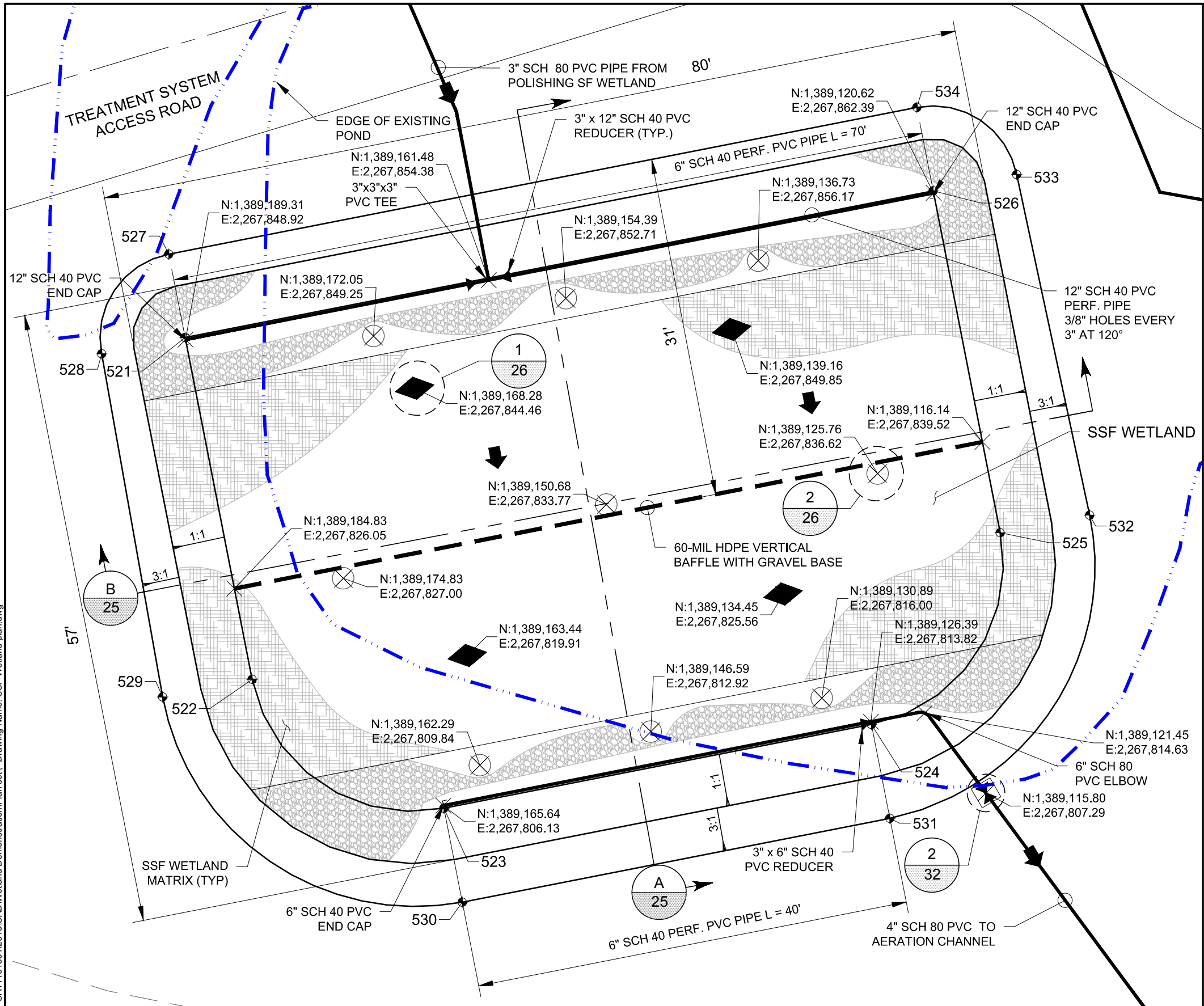


REFERENCES:	NO.	REVISION	DATE	APRVD	DRAWN
PLANS	1	ISSUED FOR REVIEW	05/31/13	STA	DWW
DATUM	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	
					DESIGNED KF
					CHECKED CBF
					REVIEWED RJB



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Rancho Cordova, CA 95670  
(916) 636-3200

RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
		SCALE: 1" = 10'	
		SHEET: 13 OF 38	
POLISHING SURFACE FLOW WETLAND PLAN		PROJ No: SA11161315	13



LEGEND

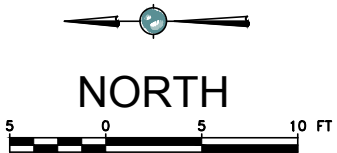
- TEMPERATURE PROFILE PROBE
- FLOW DIRECTION
- MONITORING PORT
- FINAL GRADING POINT
- BALL VALVE

FINAL GRADING POINT TABLE

POINT #	NORTHING	EASTING	ELEV.	DESC.
521	1,389,189.35	2,267,849.12	8831.79	BOM
522	1,389,183.20	2,267,817.71	8831.60	BOM
523	1,389,165.59	2,267,805.88	8831.46	BOM
524	1,389,126.34	2,267,813.58	8831.46	BOM
525	1,389,114.50	2,267,831.18	8831.60	BOM
526	1,389,120.66	2,267,862.59	8831.79	BOM
527	1,389,190.86	2,267,856.78	8837.59	BOM
528	1,389,197.01	2,267,847.61	8837.59	BOM
529	1,389,191.41	2,267,816.10	8837.59	TOB
530	1,389,163.90	2,267,797.25	8837.59	TOB
531	1,389,124.65	2,267,804.95	8837.59	TOB
532	1,389,106.29	2,267,832.79	8837.59	TOB
533	1,389,113.00	2,267,864.09	8837.59	TOB
534	1,389,122.16	2,267,870.25	8837.59	TOB

NOTES:

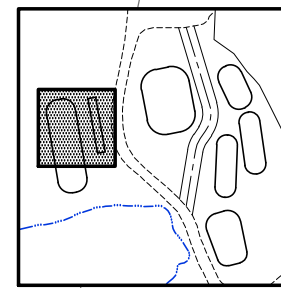
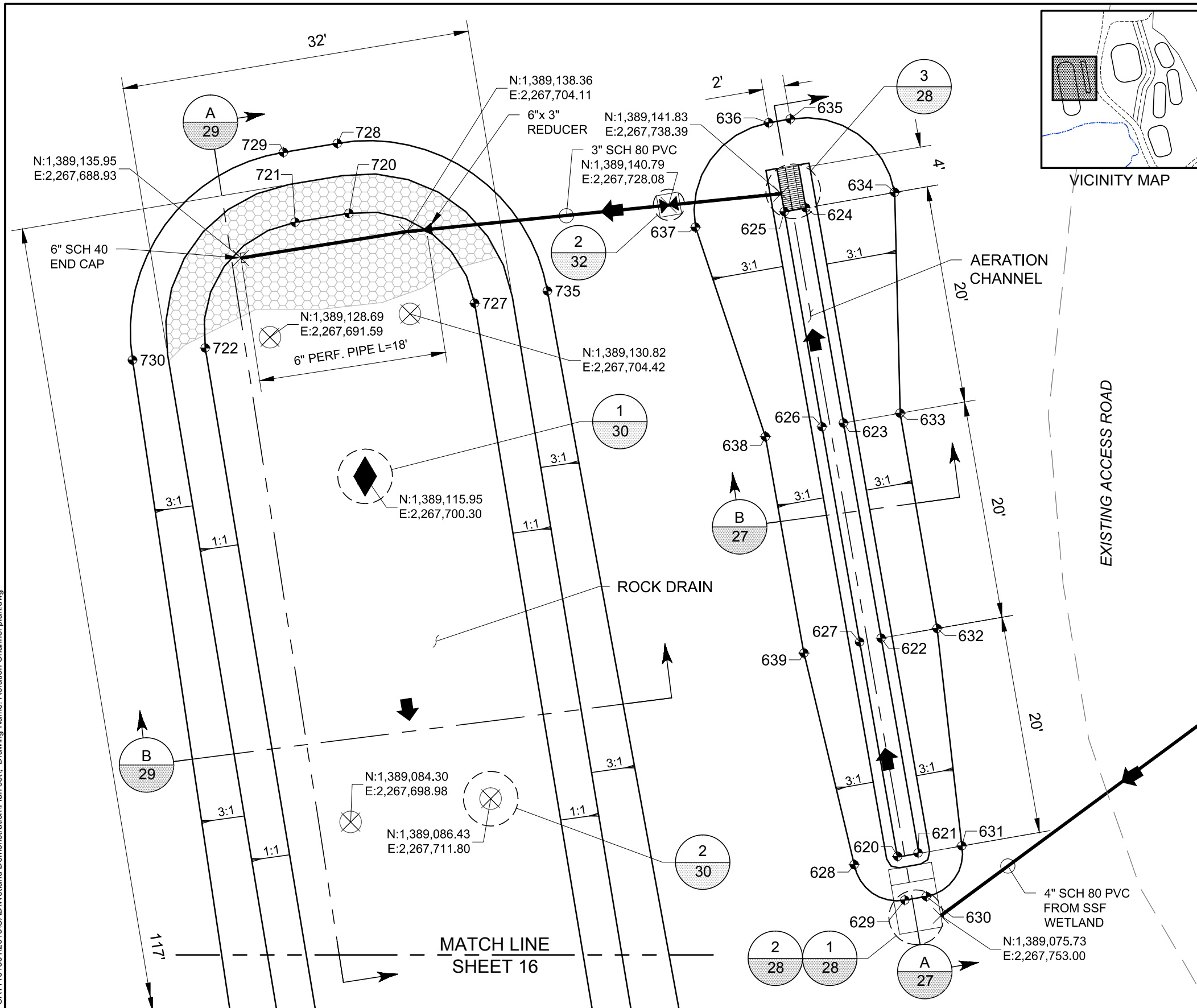
- SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
- FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
- SEE CROSS SECTIONS FOR MATRIX MATERIAL.
- SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.



Plot Date: 06/28/13 - 1:38pm. Plotted by: mark crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: SSF Wetland plan.dwg

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW	amc 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	SUBSURFACE FLOW WETLAND PLAN	DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF				SCALE: 1" = 10'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF				SHEET: 14 OF 38	
					REVIEWED	RJB				PROJ No: SA11161315	14

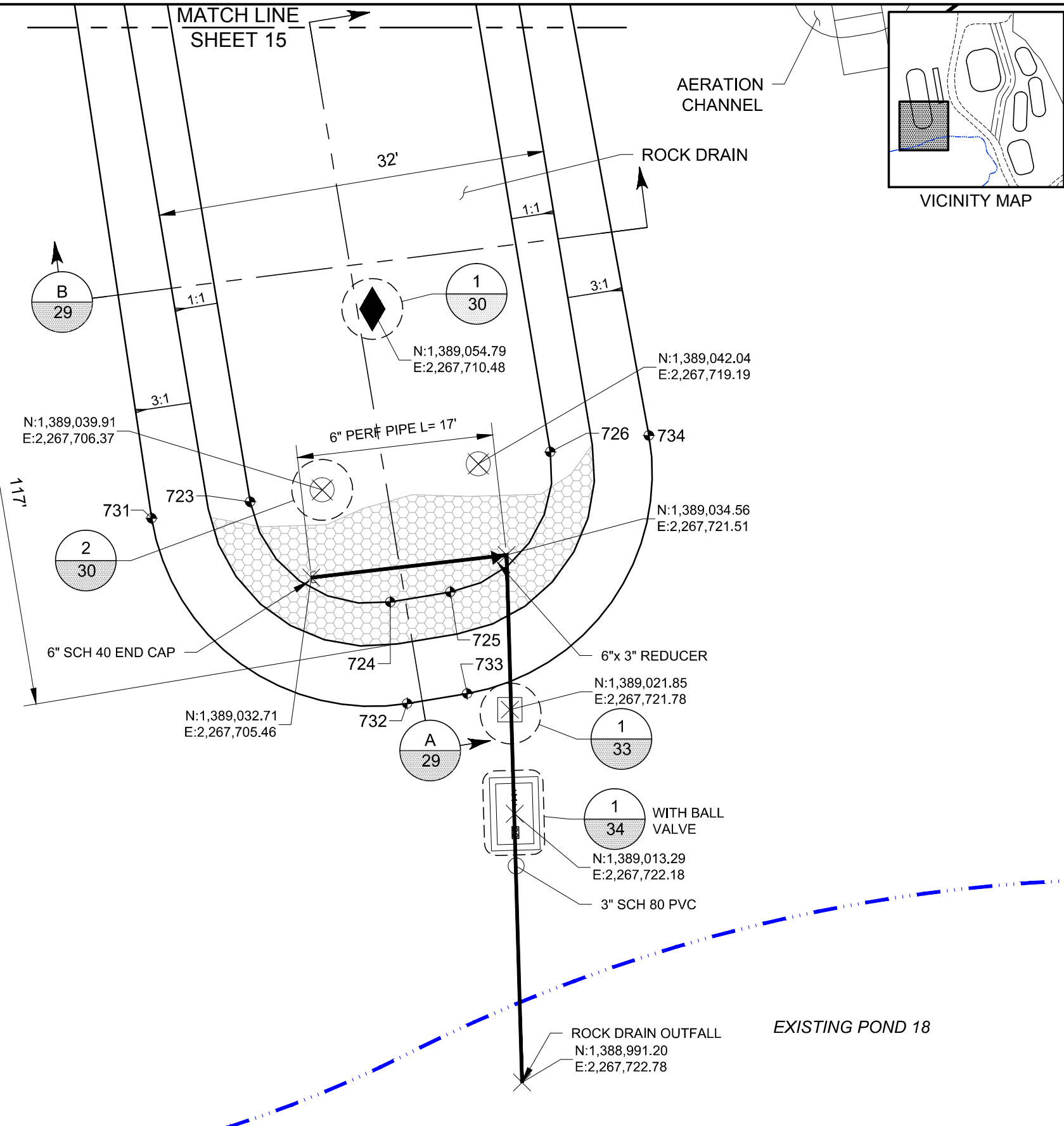




DATE: 05/31/13	
SCALE: 1" = 10'	
SHEET: 15 OF 38	
PROJ No: SA11161315	15



Plot Date: 06/28/13 - 1:39pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Rock Drain plan.dwg



## LEGEND

- TEMPERATURE PROFILE PROBE
- FLOW DIRECTION
- MONITORING PORT
- FINAL GRADING POINT

## FINAL GRADING POINT TABLE

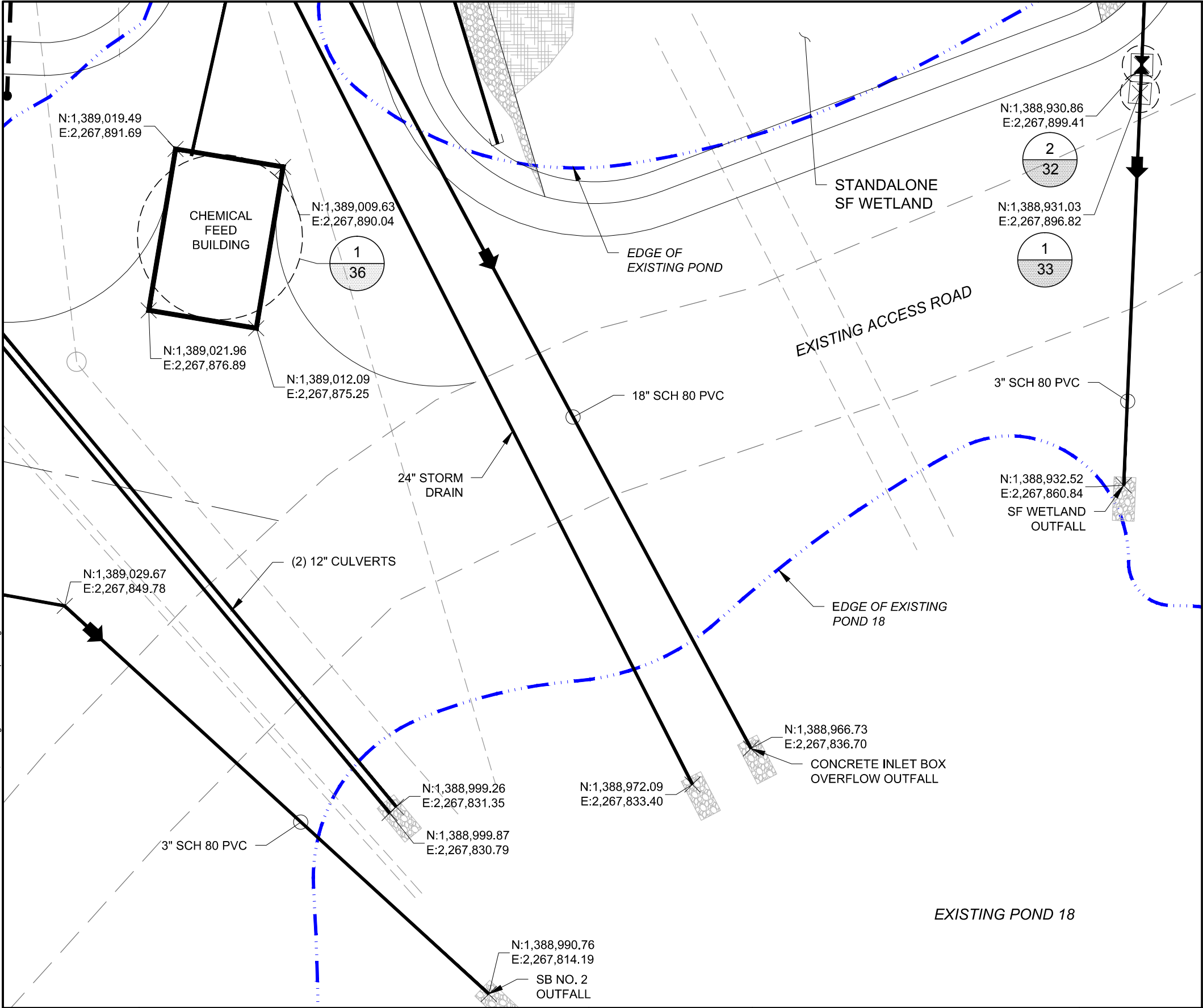
POINT #	NORTHING	EASTING	ELEV.	DESC.
720	1,389,140.03	2,267,698.83	8826.80	BOM
721	1,389,139.21	2,267,693.90	8826.80	BOM
722	1,389,127.70	2,267,685.67	8826.72	BOM
723	1,389,038.93	2,267,700.45	8826.23	BOM
724	1,389,030.70	2,267,711.95	8826.14	BOM
725	1,389,031.52	2,267,716.88	8826.14	BOM
726	1,389,043.03	2,267,725.11	8826.23	BOM
727	1,389,131.81	2,267,710.34	8826.72	BOM
728	1,389,146.44	2,267,697.76	8831.30	TOB
729	1,389,145.62	2,267,692.83	8831.30	TOB
730	1,389,126.60	2,267,679.01	8831.30	TOB
731	1,389,037.58	2,267,692.35	8831.30	TOB
732	1,389,022.35	2,267,713.34	8831.30	TOB
733	1,389,023.17	2,267,718.27	8831.30	TOB
734	1,389,044.38	2,267,733.21	8831.30	TOB
735	1,389,132.92	2,267,717.00	8831.30	TOB

## NOTES:

- SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
- FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
- SEE CROSS SECTIONS FOR MATRIX MATERIAL.
- SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.
- PROVIDE 8 CY OF 6" - 8" ROUNDED ROCK TOTAL TO PLACE AS OUTLET PROTECTION FOR OUTFALL PIPE INTO POND 18. SEE OUTFALL PLAN FOR OUTFALL DETAIL.

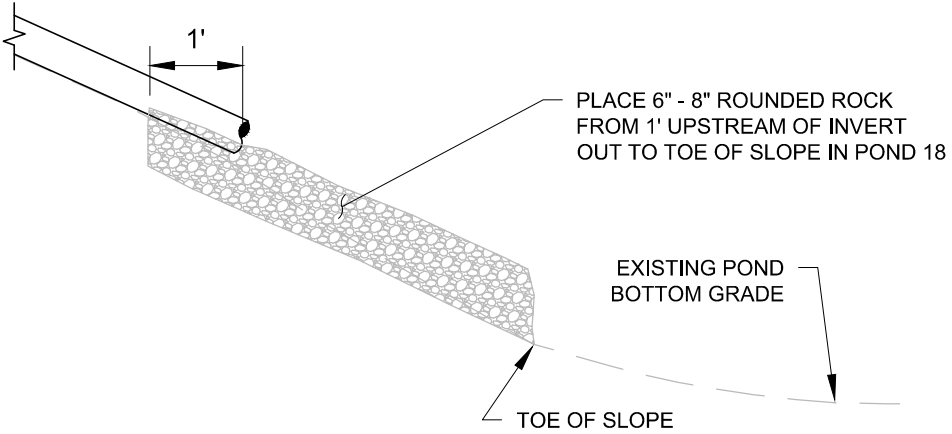


REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW	amc 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	ROCK DRAIN PLAN	DATE: 05/31/13	
										SCALE: 1" = 10'	SHEET: 16 OF 38
DATUM	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF				PROJ No: SA11161315	16
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF					
					REVIEWED	RJB					



LEGEND

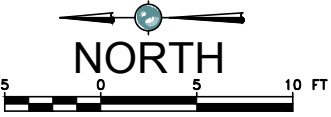
- FLOW DIRECTION
- BALL VALVE



OUTFALL DETAIL

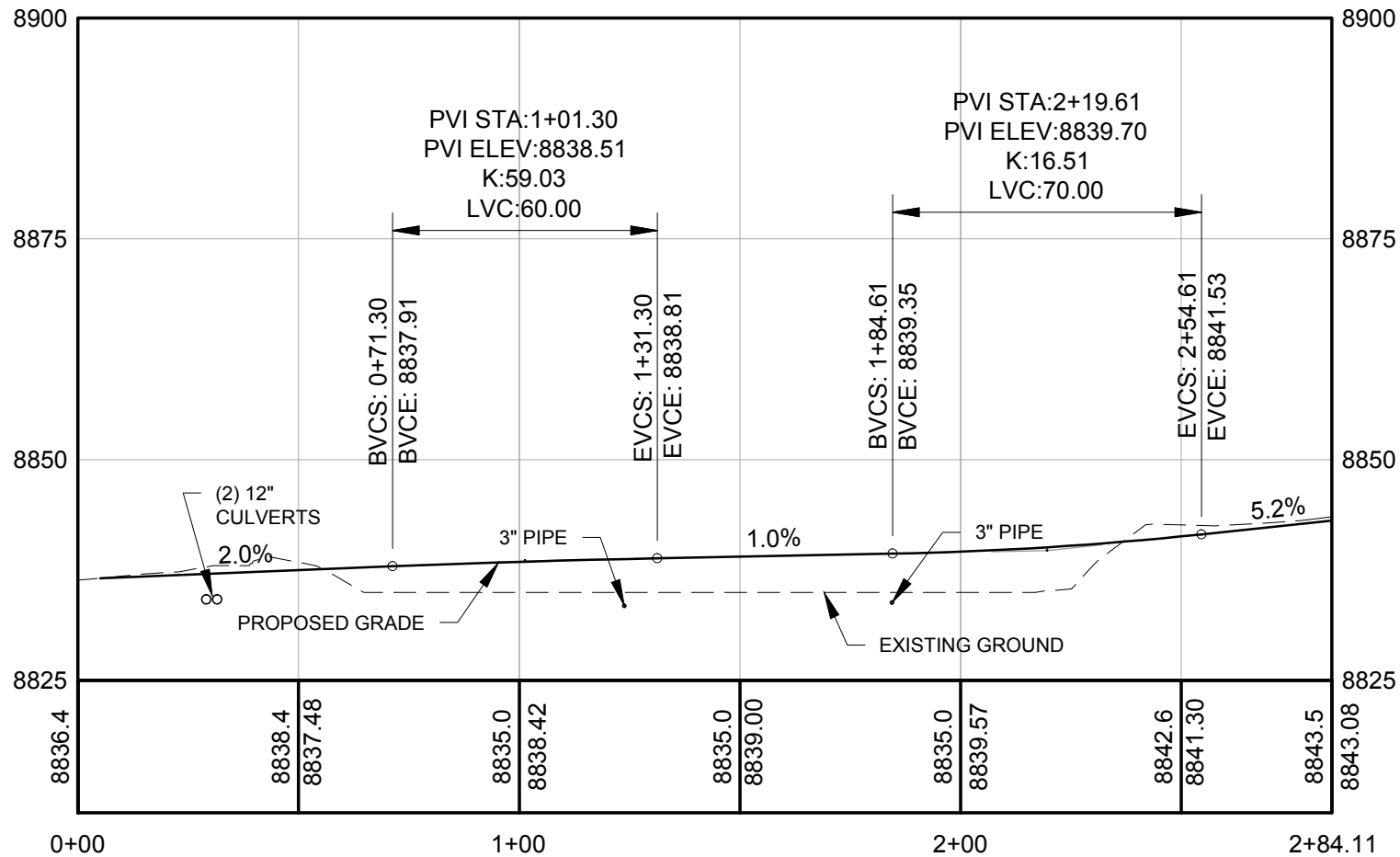
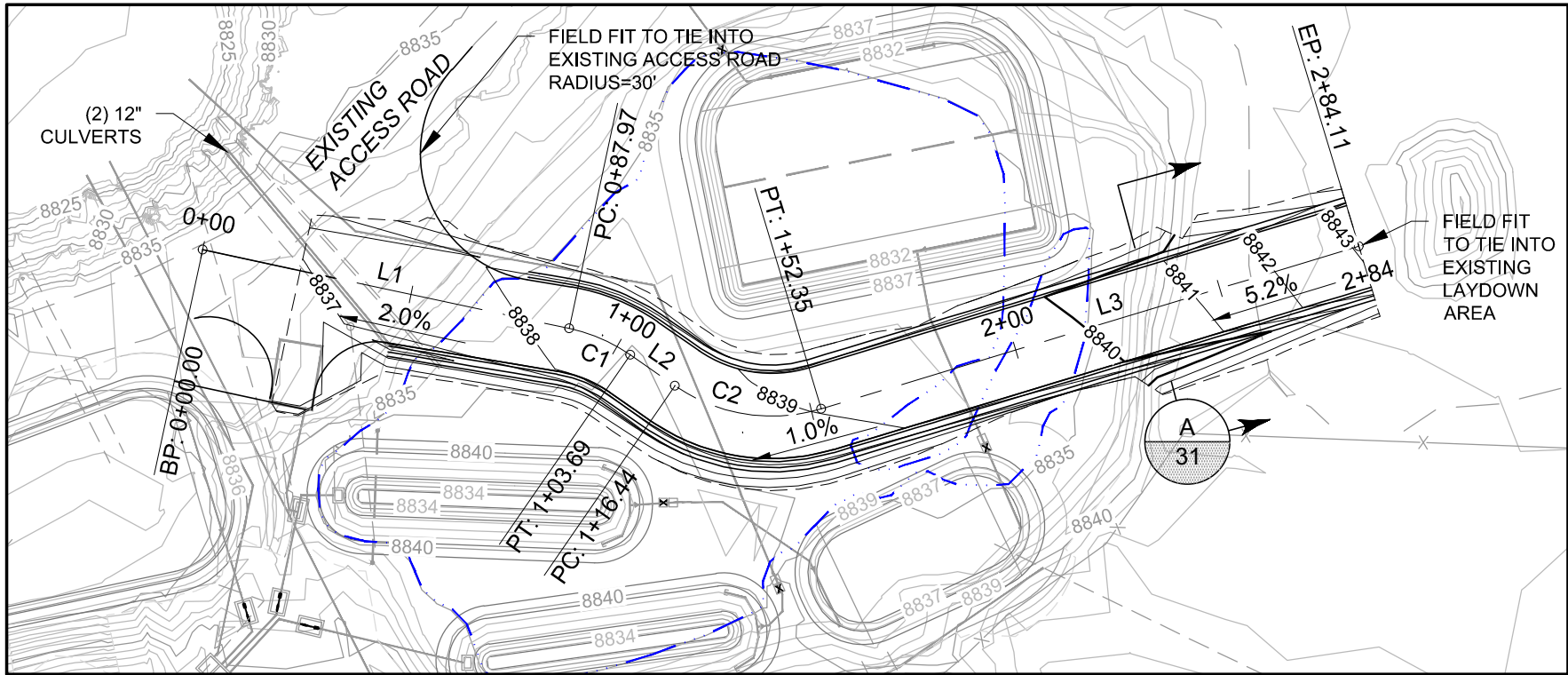
NOTES:

- 1. SEE HYDRAULIC PROFILE FOR ELEVATIONS OF PIPES, INLET STRUCTURES, AND OUTLET STRUCTURES.
- 2. PROVIDE 8 CY OF 6"-8" ROUNDED ROCK TOTAL TO PLACE AS OUTLET PROTECTION FOR EACH OUTFALL PIPE INTO POND 18.
- 3. FOR EXISTING PIPES, SEE PIPING DEMOLITION PLAN.
- 4. SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.

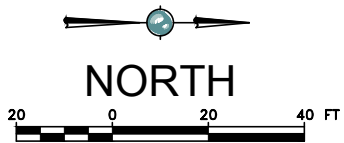


REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ KF				SCALE: 1" = 10'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		OUTFALL PLAN		SHEET: 17 OF 38	
					REVIEWED _____ RJB				PROJ No:	17
									SA11161315	
DATUM										

Plot Date: 06/28/13 - 1:39pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Access plan.dwg

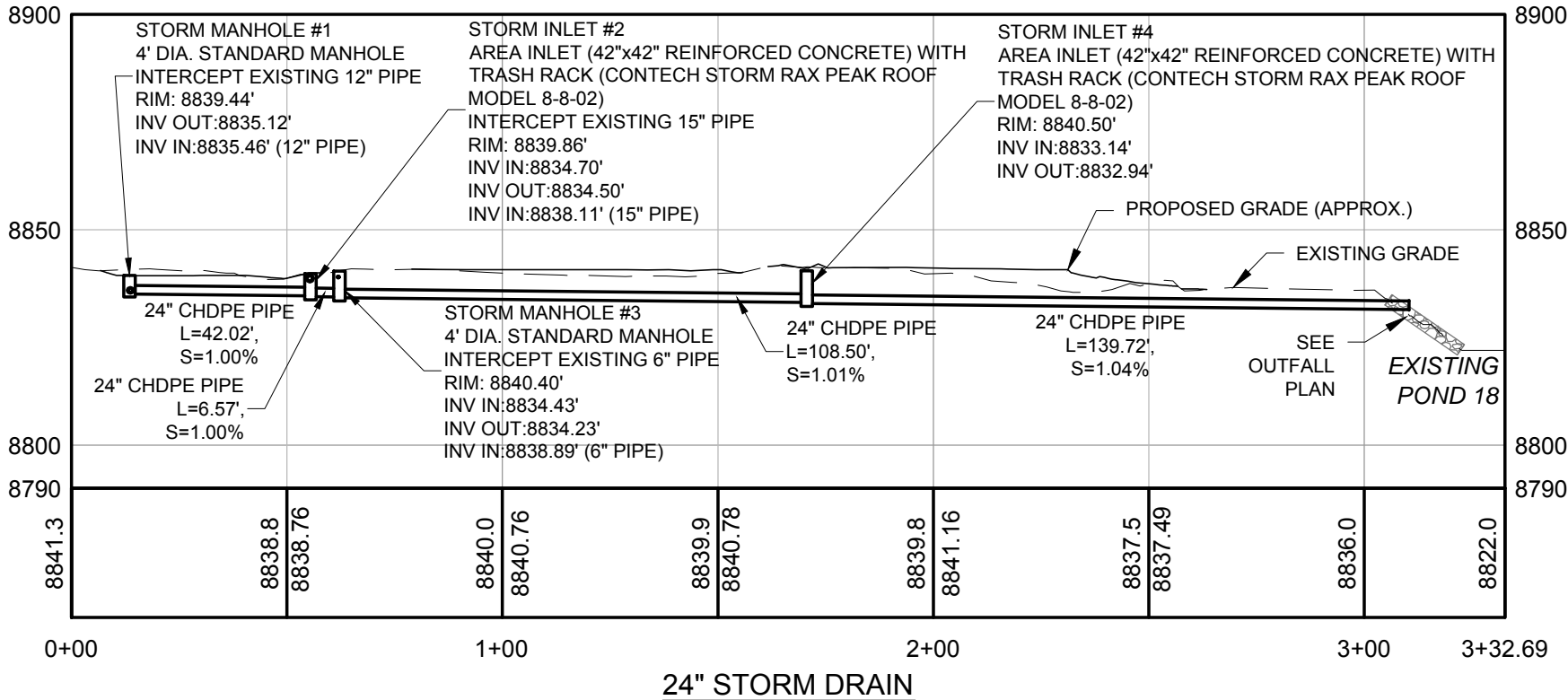
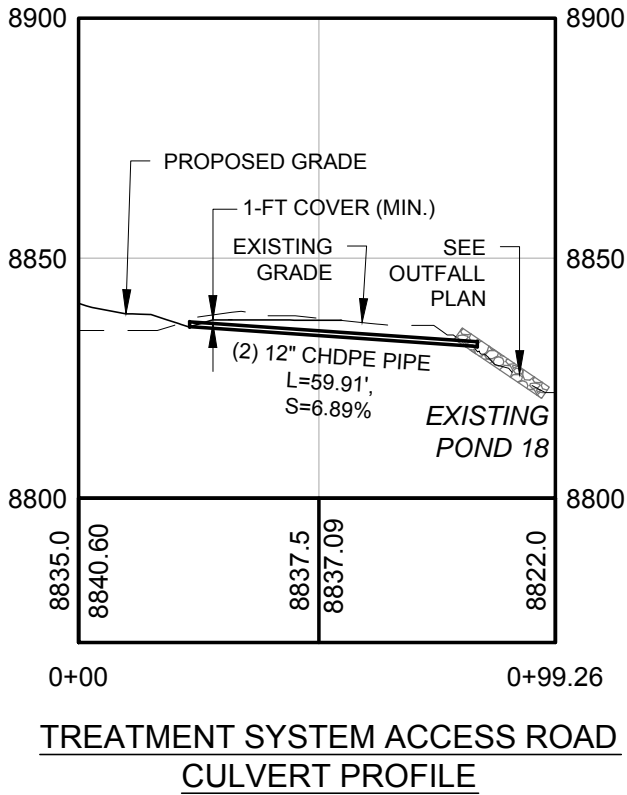
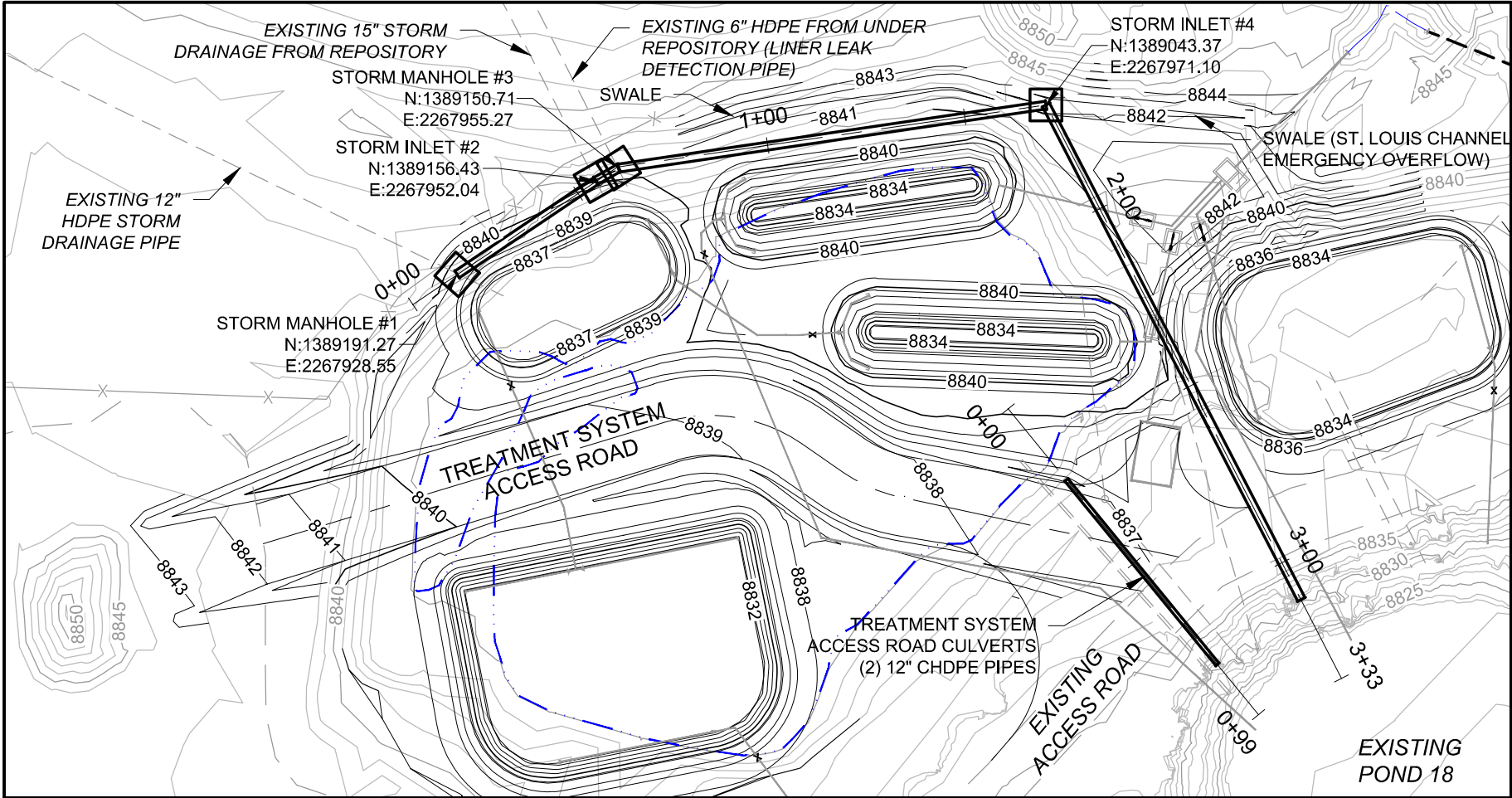


TREATMENT SYSTEM ACCESS ROAD						
SEGMENT	STARTING STATION	NORTHING	EASTING	DELTA (D-M-S)	RADIUS (FT)	LENGTH (FT)
L1	0+00.00	1,388,993.90	2,267,854.13			
C1	0+87.97	1,389,079.90	2,267,872.61	22-31-09	40.00	15.72
L2	1+03.69	1,389,094.24	2,267,878.81			
C2	1+16.44	1,389,104.73	2,267,886.06	51-27-04	40.00	35.92
L3	1+52.35	1,389,139.03	2,267,891.45			

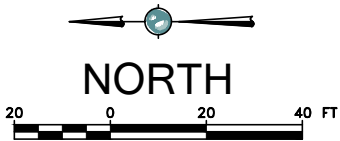


REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC	<div>amc</div> <div>10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF			SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF			SHEET: 18 OF 38	
					REVIEWED	RJB			PROJ No: SA11161315	
DATUM								TREATMENT SYSTEM ACCESS ROAD PLAN AND PROFILE		18



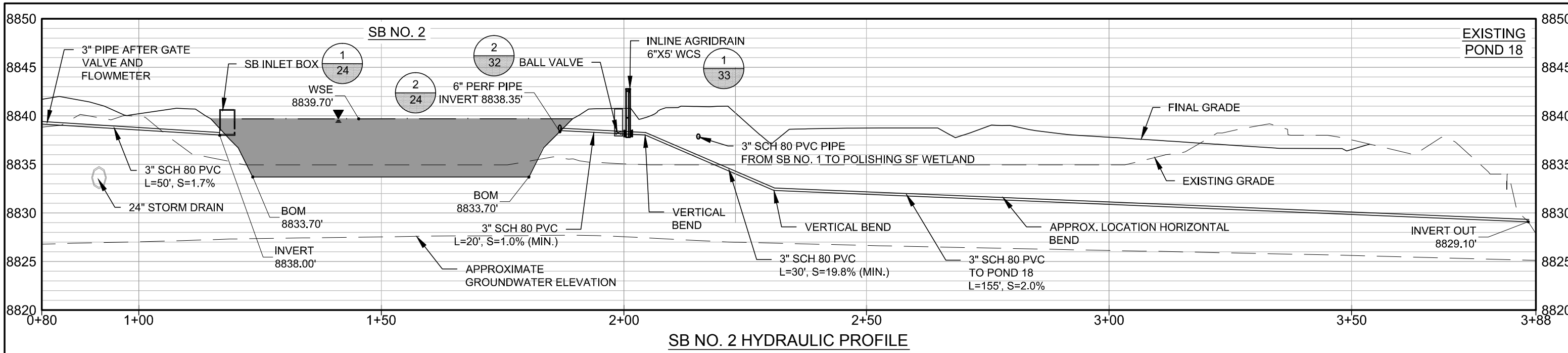


NOTE:  
1. SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.

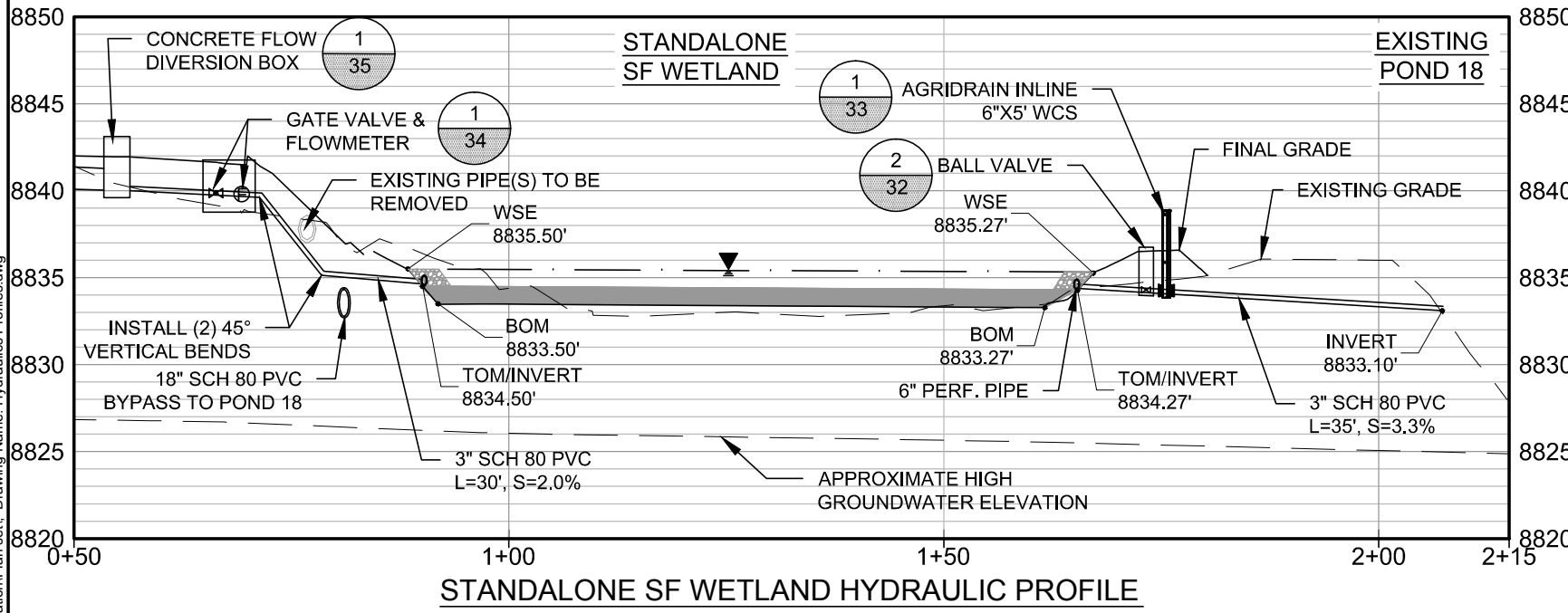


REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC	 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF				SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF				SHEET: 19 OF 38	
					REVIEWED	RJB		STORM DRAIN PLAN AND PROFILE		PROJ No:	19
DATUM										SA11161315	





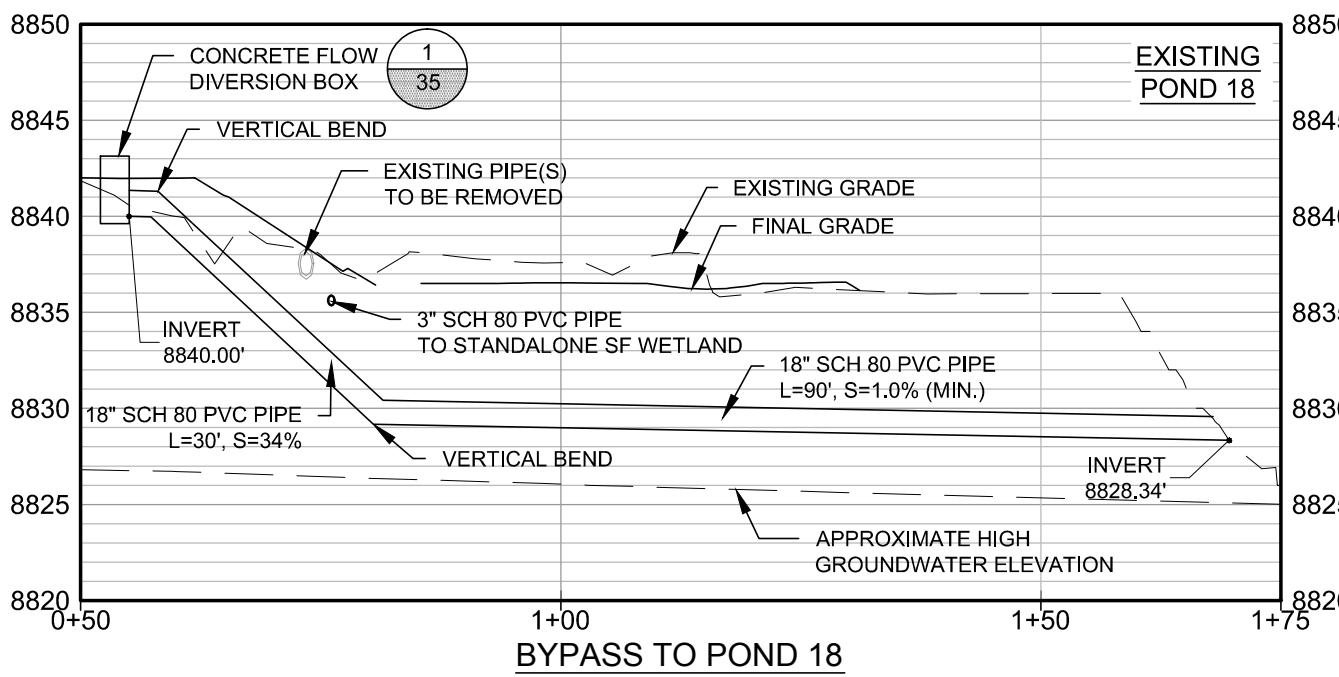
SB NO. 2 HYDRAULIC PROFILE



STANDALONE SF WETLAND HYDRAULIC PROFILE

NOTES:

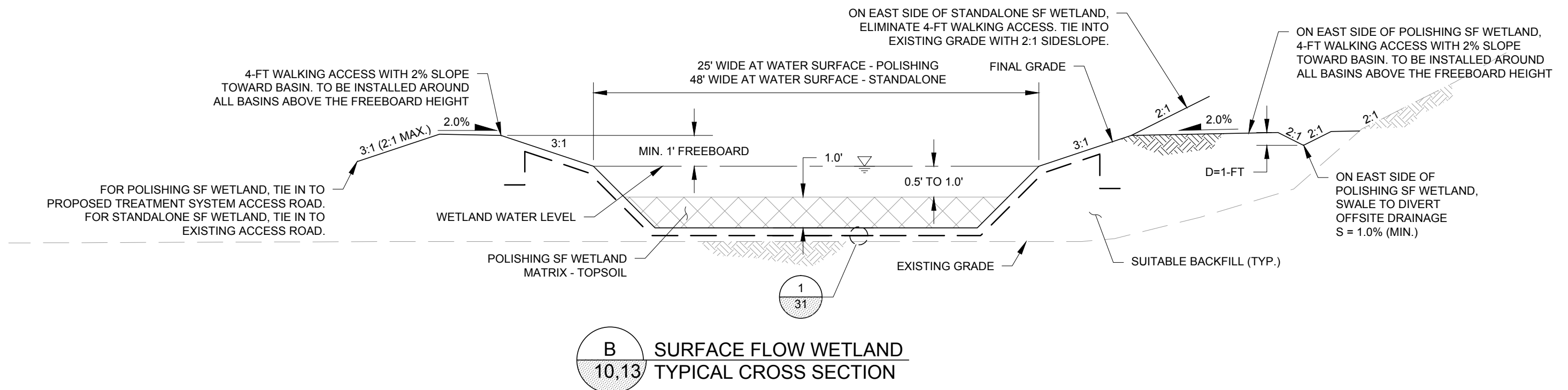
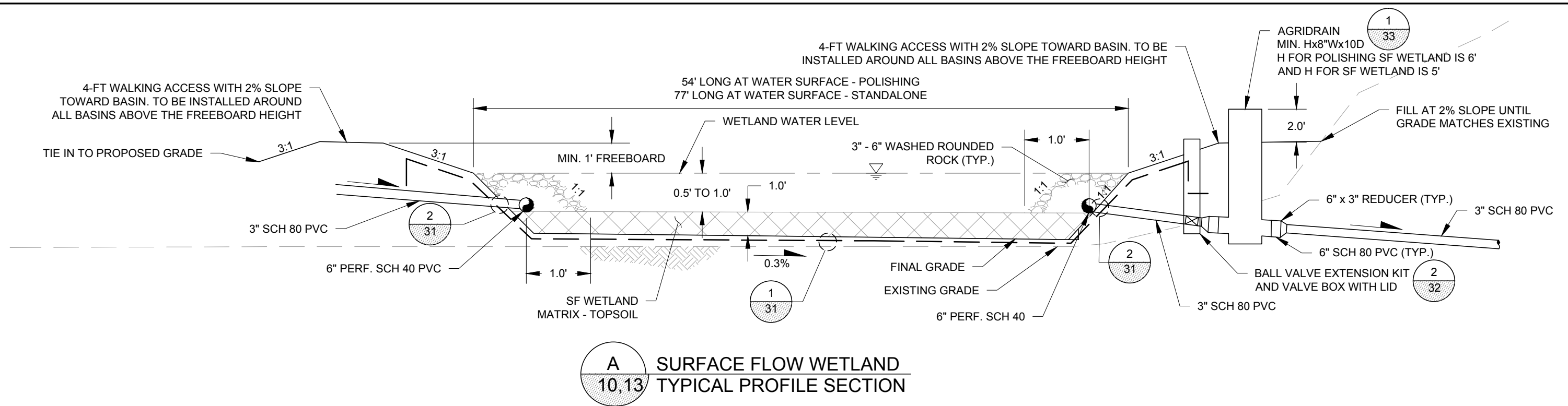
1. PIPE LENGTHS AND SLOPES ARE APPROXIMATE. PIPES SHOULD BE FIELD FIT TO MATCH THE PROPOSED GRADES AND ALIGNMENT. MINIMUM PIPE SLOPE = 1.0%.
2. SEE OUTFALL PLAN FOR OUTLET EROSION PROTECTION.
3. SEE TRENCH DETAIL FOR INSULATION REQUIREMENTS FOR PIPE BURIED <6-FT DEEP.
4. PROFILE VERTICAL EXAGGERATION IS 2:1.
5. SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.



BYPASS TO POND 18

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____KF	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13		
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KF				SCALE: 1" = 20'		
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF				SHEET: 21 OF 38		
	DATUM						REVIEWED_____RJB	HYDRAULIC PROFILE- SB NO.2, STANDALONE SF WETLAND, BYPASS TO POND 18		PROJ No:	21
									SA11161315		

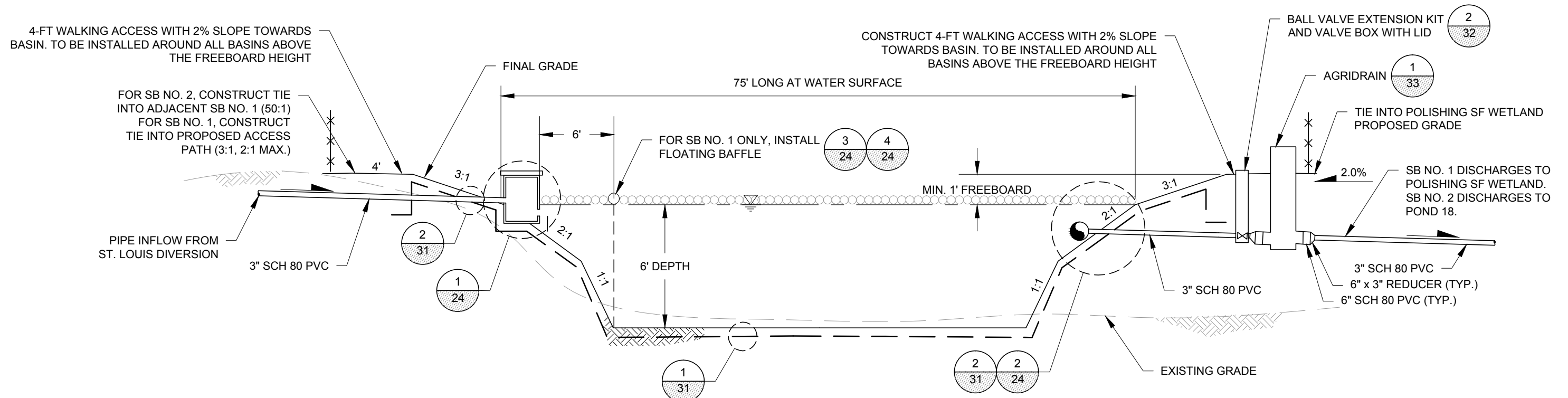




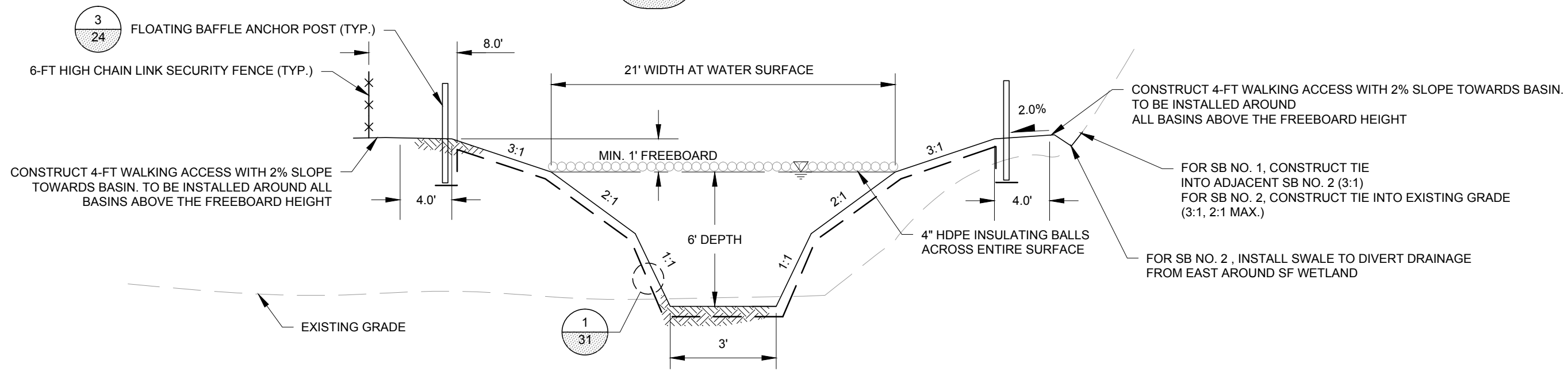
**NOTE:**  
SURFACE FLOW WETLAND TO BE PLANTED WITH SEDGES  
HARVESTED FROM AN ON-SITE LOCATION TO BE DETERMINED  
BY THE ENGINEER. SEDGES TO BE PLANTED 1.5 FT O.C.

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KF				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF		SHEET: 22 OF 38			
					REVIEWED_____RJB		PROJ No: SA11161315		22	
DATUM							SURFACE FLOW WETLANDS SECTIONS			

Plot Date: 06/28/13 - 1:40pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Settling Basin 1-2 sections.dwg

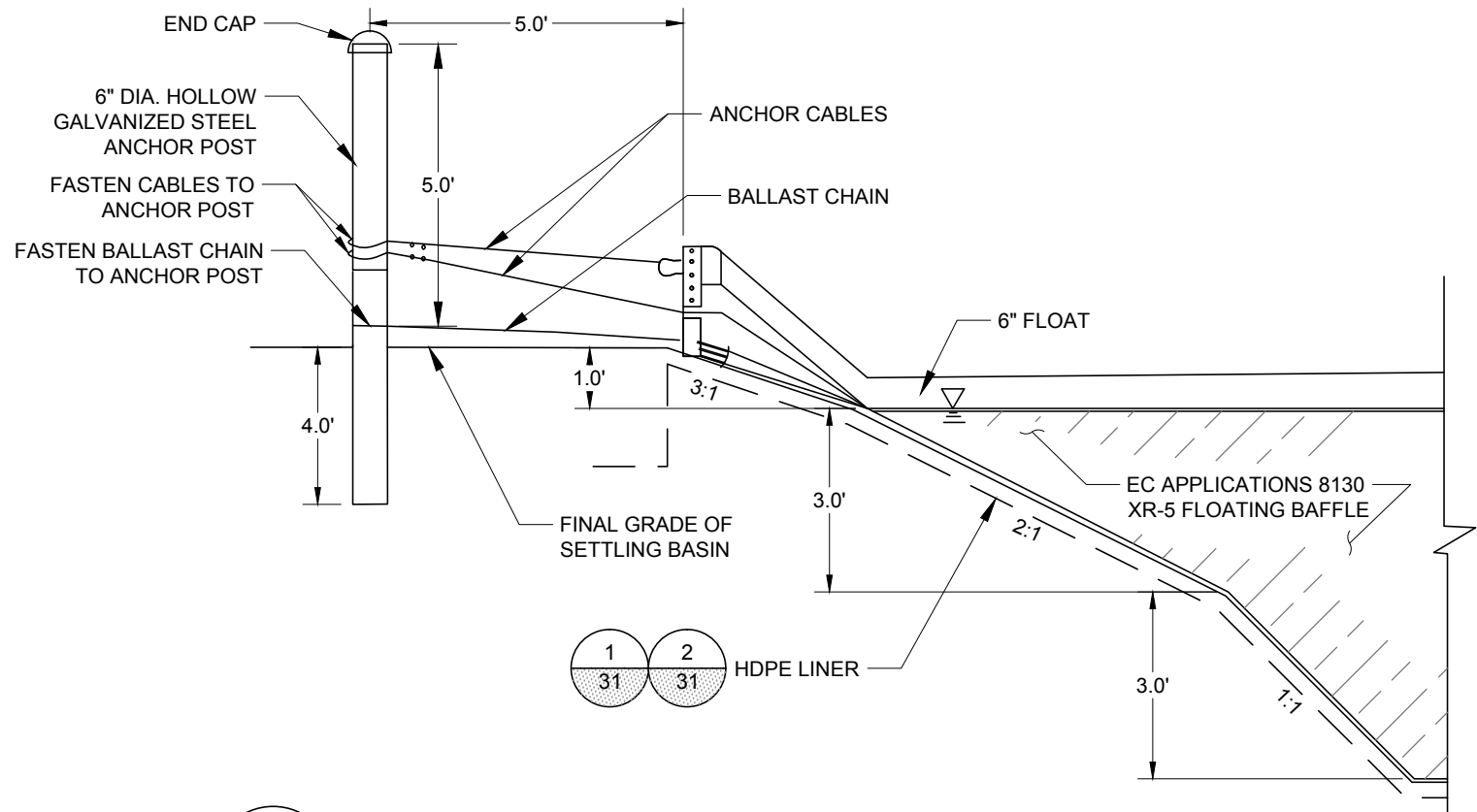


**A**  
11,12  
**SETTLING BASIN  
TYPICAL PROFILE SECTION**

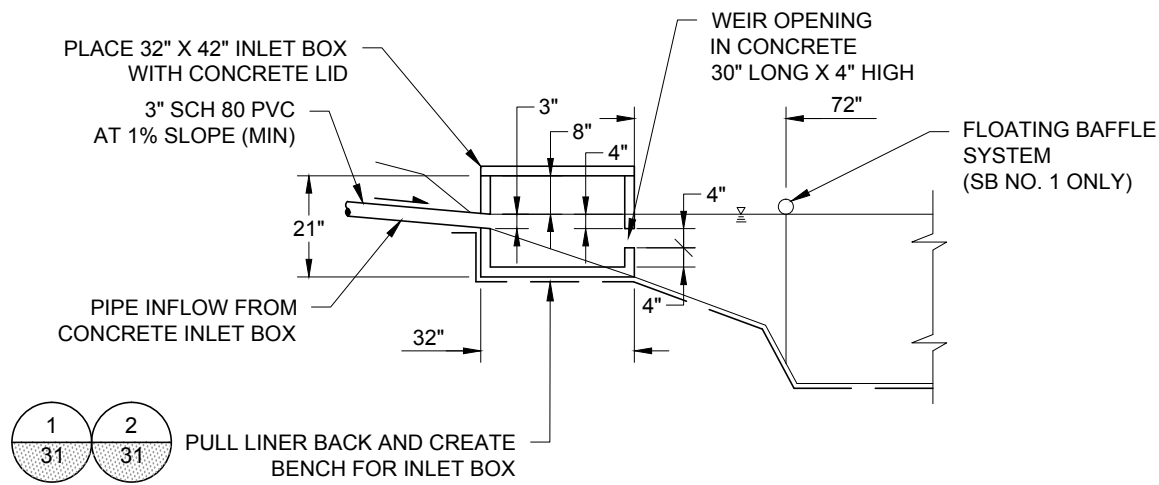


**B**  
11,12  
**SETTLING BASIN  
TYPICAL CROSS SECTION**

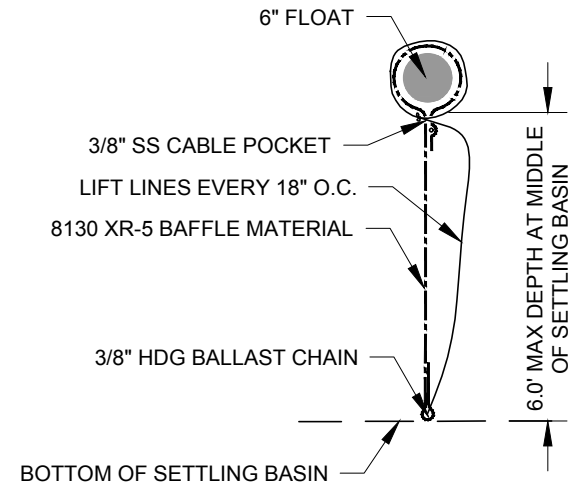
REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KF		SCALE: NTS			
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF		SHEET: 23 OF 38			
					REVIEWED_____RJB		PROJ No: 23			
							SA11161315			
DATUM							SETTLING BASINS NO. 1 & NO. 2 TYPICAL SECTIONS			



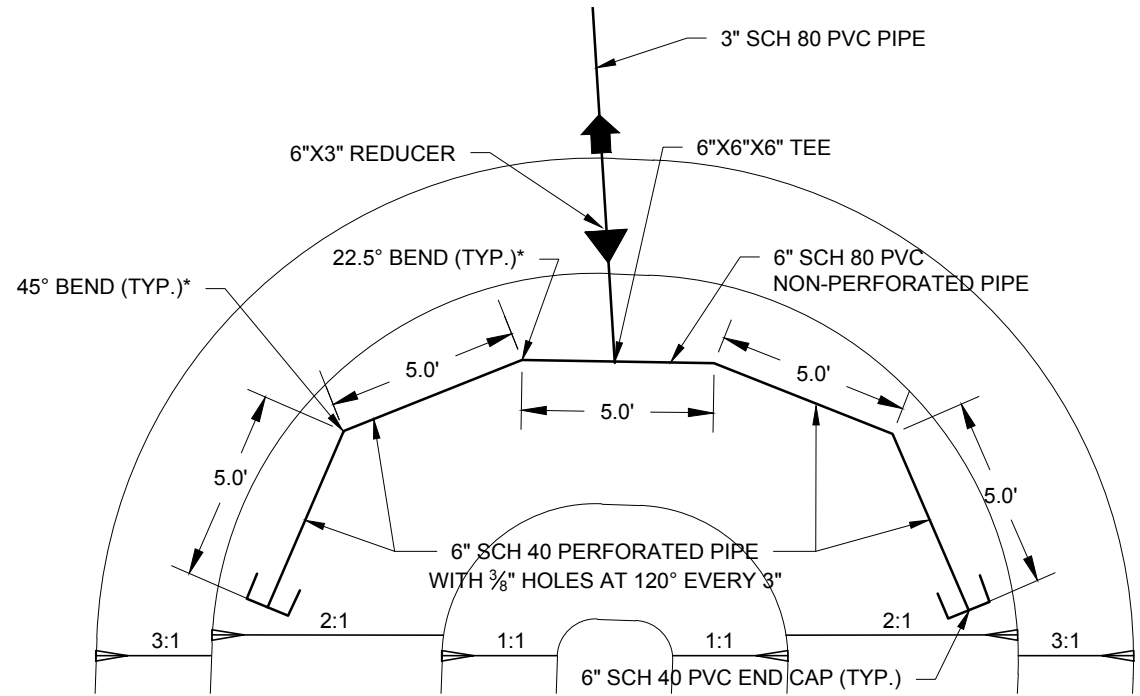
**3**  
11,12,23  
**SETTLING BASIN FLOATING BAFFLE  
PROFILE VIEW**



**1**  
11,12,20,21,23  
**SETTLING BASIN NO. 1 AND NO. 2  
INLET DETAIL**



**4**  
12,23  
**SETTLING BASIN FLOATING BAFFLE  
SECTION VIEW**



**2**  
11,12,20,21,23  
**SETTLING BASIN NO. 1 AND NO. 2  
OUTLET DETAIL**

**NOTE:**  
\* FIELD FIT HORIZONTAL BENDS SO THAT PERFORATED PIPE  
CONTOURS ALONG POND AND IS SUPPORTED BY POND SIDESLOPE.

REFERENCES:	NO.	REVISION	DATE	APRVD	DRAWN	MGC
PLANS	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF
DATUM	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF
					REVIEWED	RJB

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Rancho Cordova, CA 95670  
(916) 636-3200

**RICO - ARGENTINE MINE SITE  
CONSTRUCTED WETLAND DEMONSTRATION**

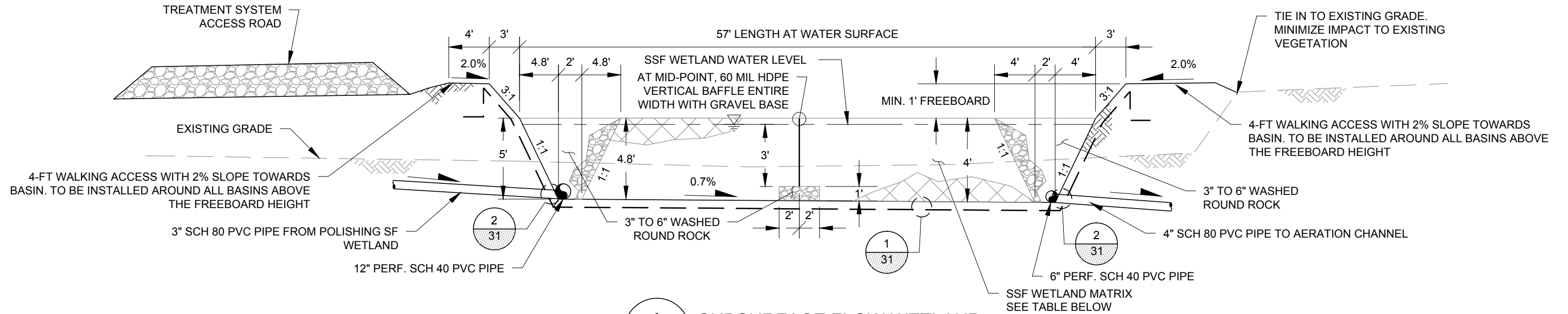
**SETTLING BASINS NO. 1 & NO. 2 DETAILS**

DATE: 05/31/13  
SCALE: NTS  
SHEET: 24 OF 38

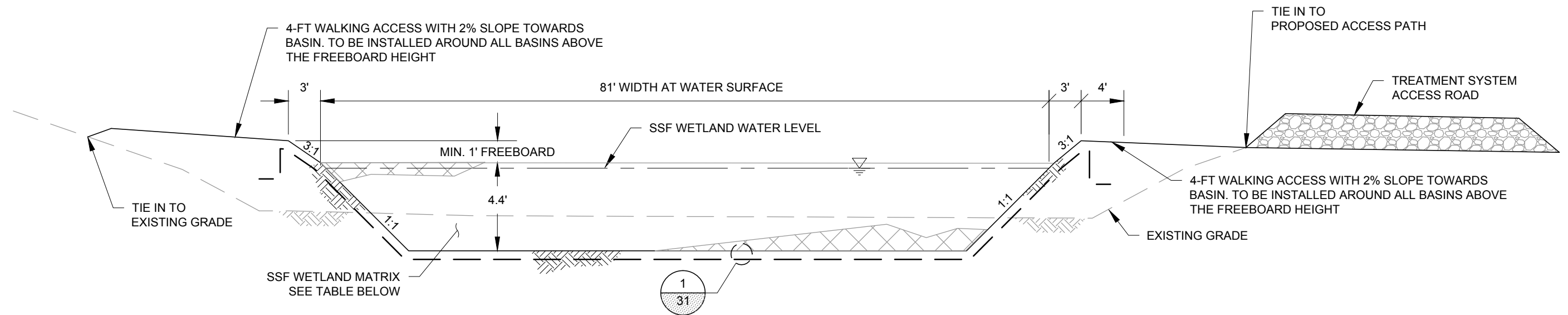
PROJ No: SA11161315  
**24**



Plot Date: 06/28/13 - 1:41pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: SSF Wetland sections.dwg



**A**  
14  
SUBSURFACE FLOW WETLAND  
TYPICAL PROFILE SECTION



**B**  
14  
SUBSURFACE FLOW WETLAND  
TYPICAL CROSS SECTION

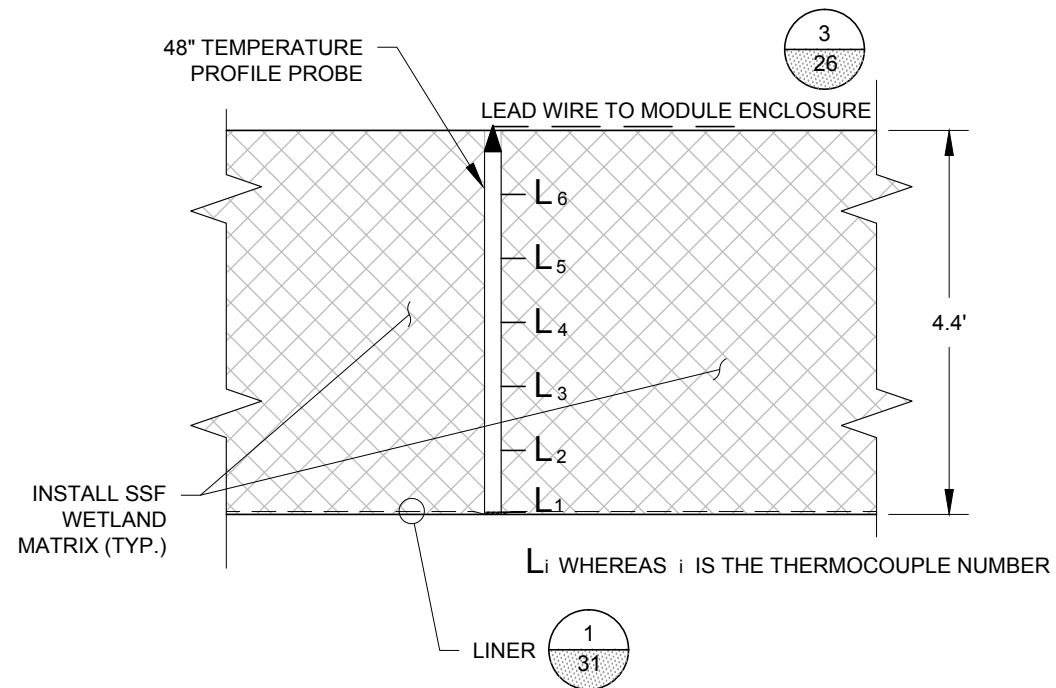
**SSF WETLAND MATRIX**

MATERIALS	%
1.5" WASHED ROUNDED ROCK	60
1" - 2" WOOD CHIPS	35
MANURE	4.6
SULFUR PRILL	0.38
LIQUID FISH FERTILIZER	0.02

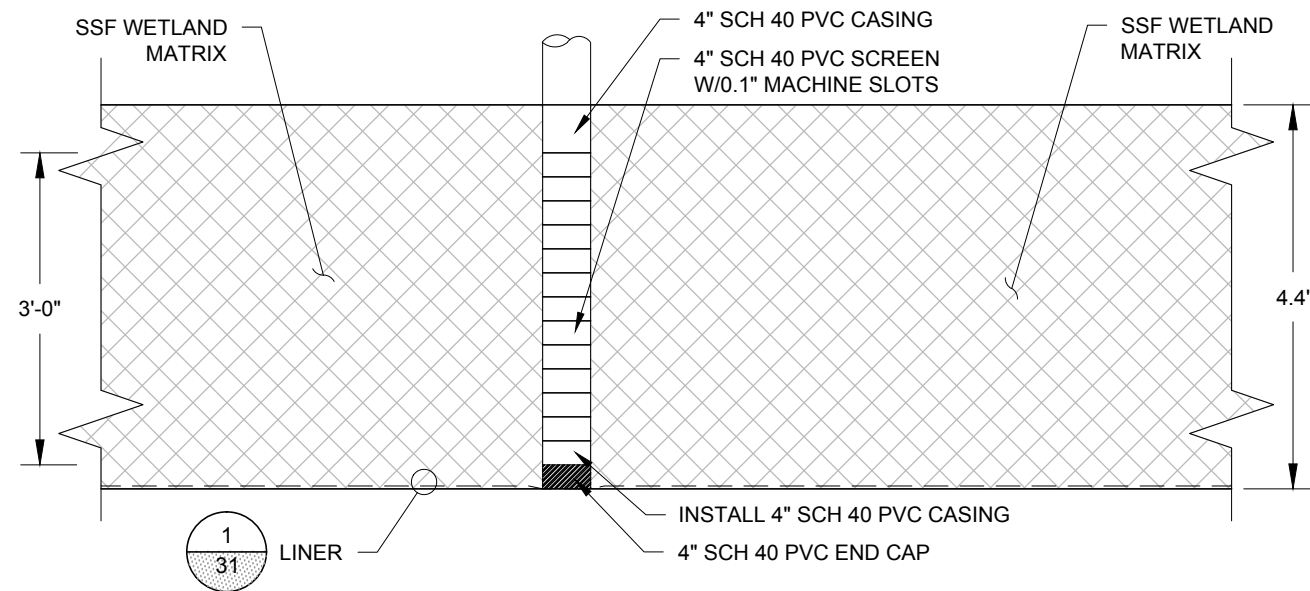
**NOTE:**  
SUBSURFACE FLOW WETLAND TO BE PLANTED WITH CATTAILS  
HARVESTED FROM AN ON-SITE LOCATION DETERMINED BY  
ENGINEER. CATTAIL TUBER PLANT SPACING TO BE 1.5-FT O.C.

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC	<b>amec</b> 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13		DESIGNED	KF			SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13		CHECKED	CBF			SHEET: 25 OF 38	
					REVIEWED	RJB			PROJ No: SA11161315	
DATUM								SUBSURFACE FLOW WETLAND SECTIONS	25	

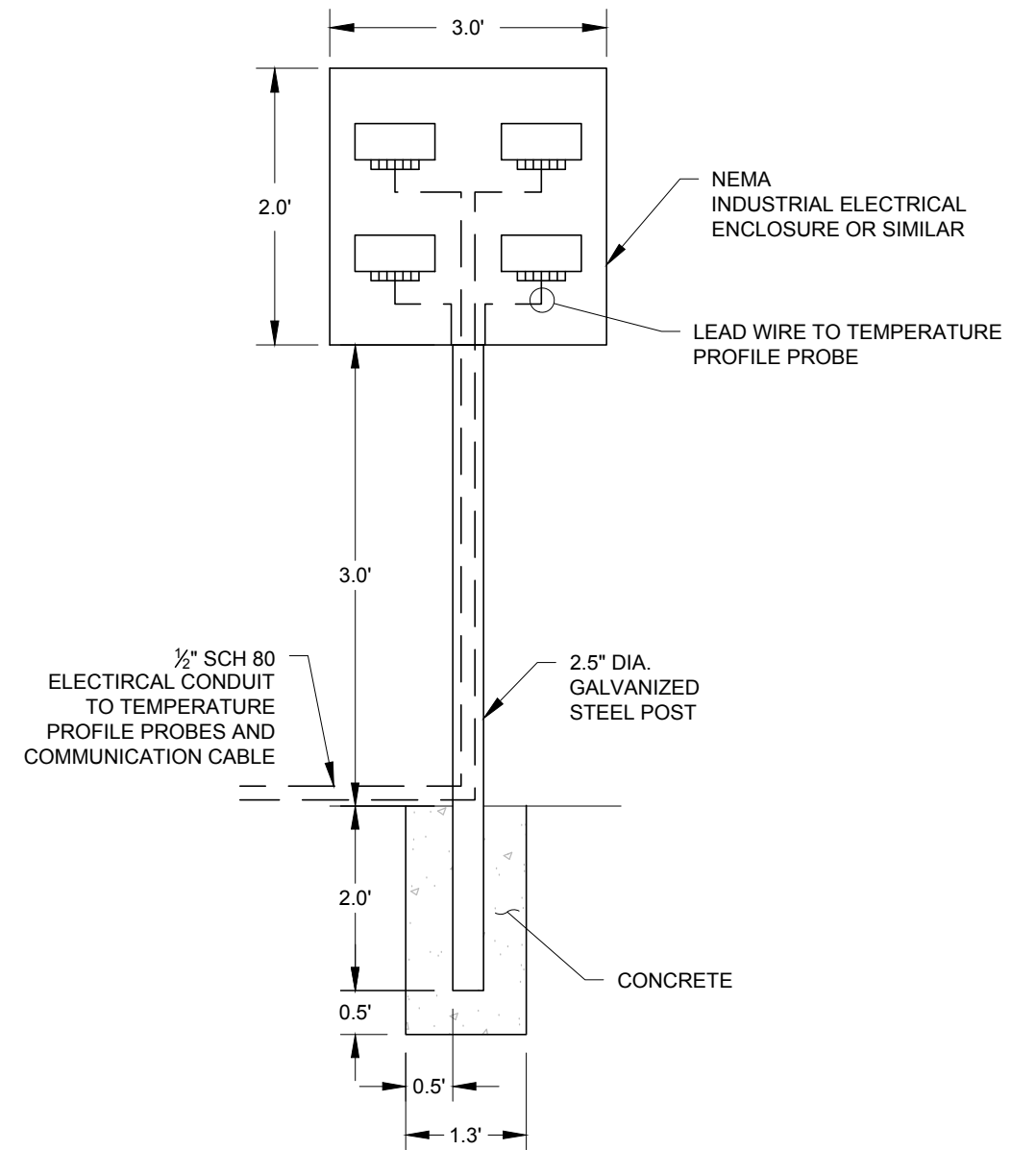
Plot Date: 06/28/13 - 1:41pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: SSF Wetland Details.dwg



**1**  
9,14 **SSF WETLAND TEMPERATURE PROFILE PROBE DETAIL**



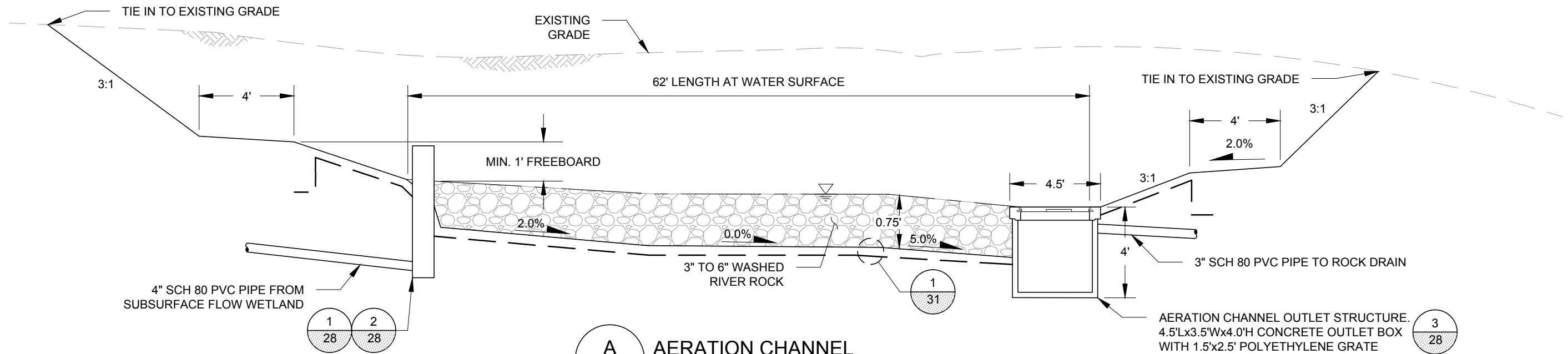
**2**  
9,14 **SSF WETLAND TEMPERATURE MONITORING PORT DETAIL**



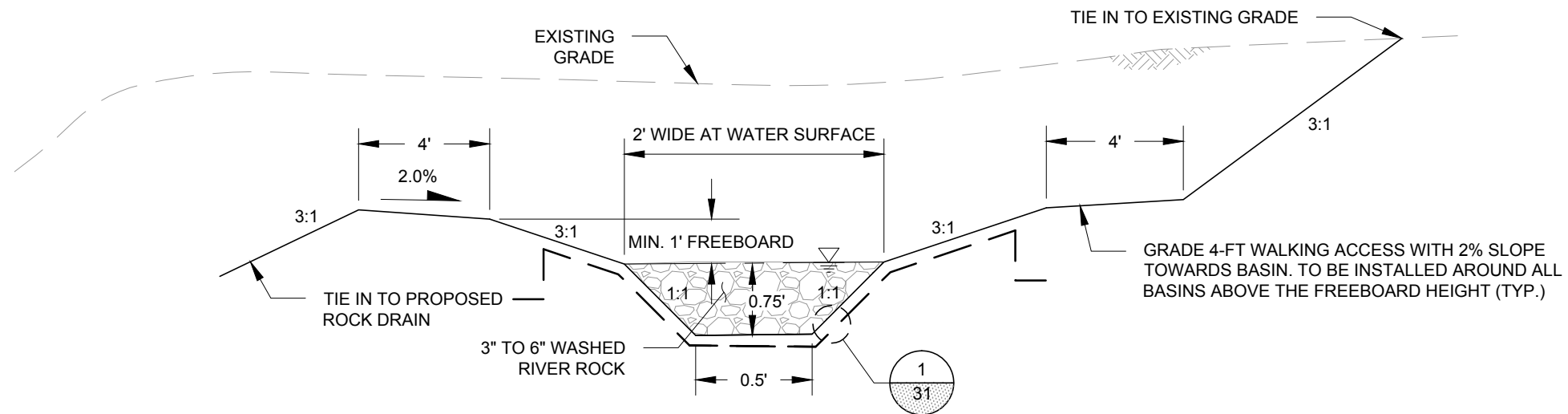
**3**  
26 **SSF WETLAND TEMPERATURE PROBE MODULE ENCLOSURE AND POST DETAIL**

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	DWW	<b>amec</b> 10670 White Rock Road , Suite 100 Sacramento, CA 95670-6032 (916) 853-8901	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION	DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	ARC			SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF			SHEET: 26 OF 38	
					REVIEWED	RJB			PROJ No:	
									SA11161315	
DATUM								<b>SUBSURFACE FLOW WETLAND DETAILS</b>		<b>26</b>

Plot Date: 06/28/13 - 1:41pm. Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Aeration Channel sections.dwg



**A**  
15  
AERATION CHANNEL  
TYPICAL PROFILE SECTION



**B**  
15  
AERATION CHANNEL  
TYPICAL CROSS SECTION

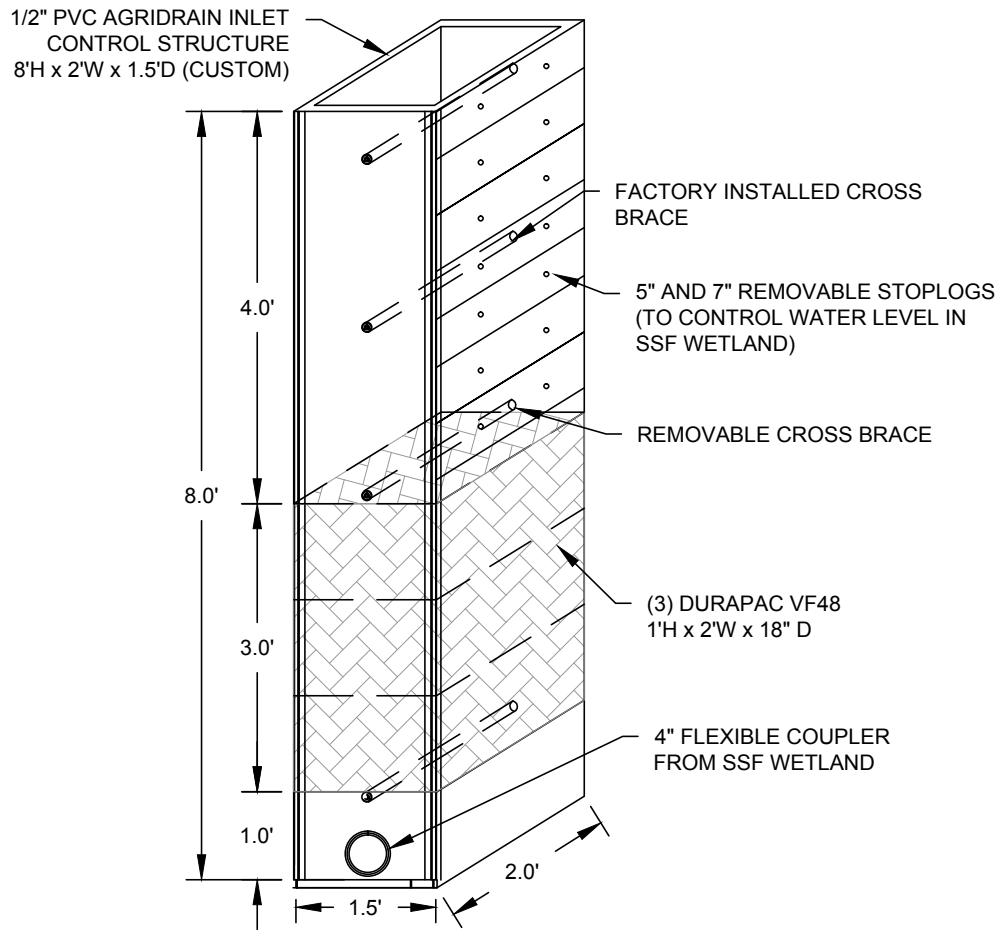
REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13		
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KF				SCALE: NTS		
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF		SHEET: 27 OF 38				
	DATUM						REVIEWED_____RJB			PROJ No:	27
								AERATION CHANNEL SECTIONS		SA11161315	



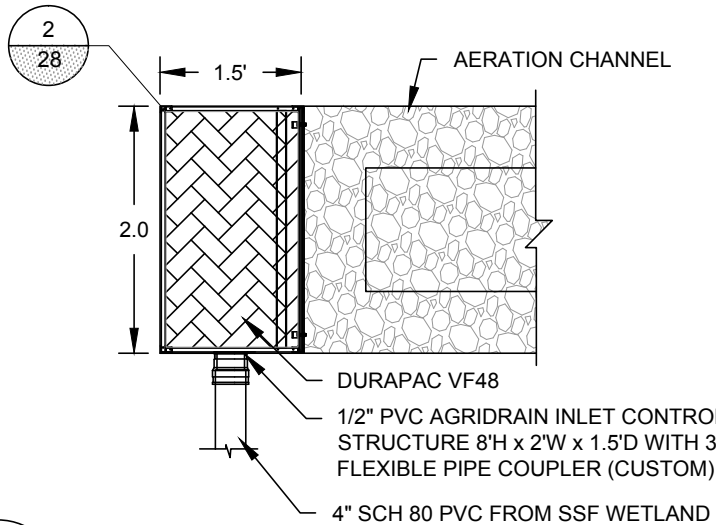
10670 White Rock Road, Suite 100  
Rancho Cordova, CA 95670  
(916) 636-3200



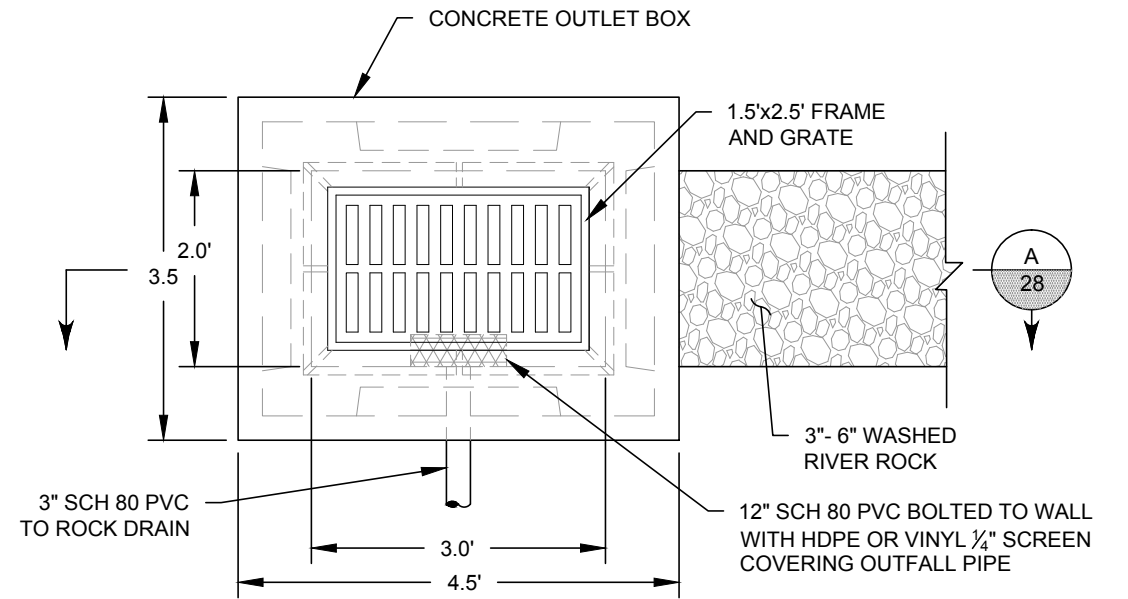
Plot Date: 06/28/13 - 1:41pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Aeration Channel details.dwg



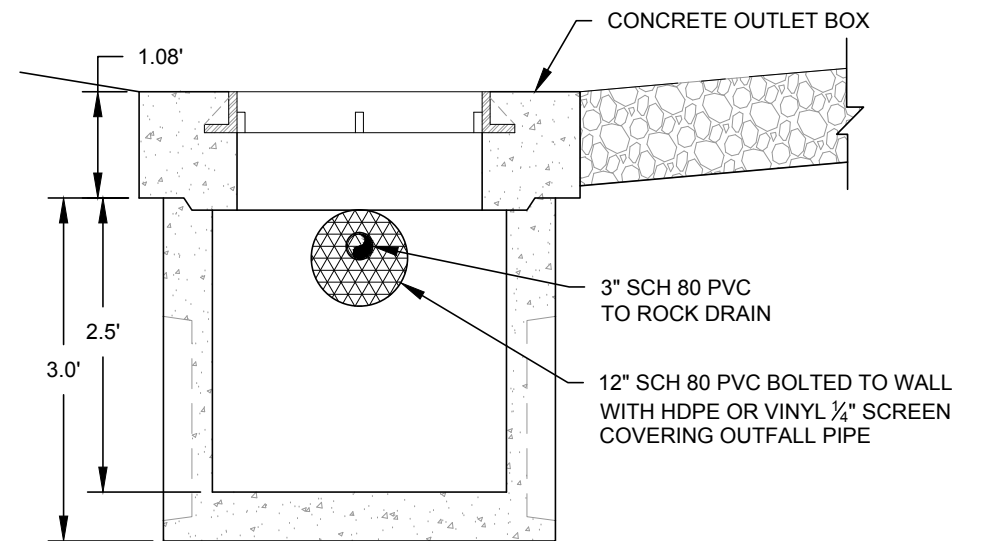
**2**  
15,20,27,28  
**AERATION CHANNEL INLET STRUCTURE**  
ISOMETRIC VIEW



**1**  
15,20,27  
**AERATION CHANNEL INLET STRUCTURE**  
PLAN VIEW

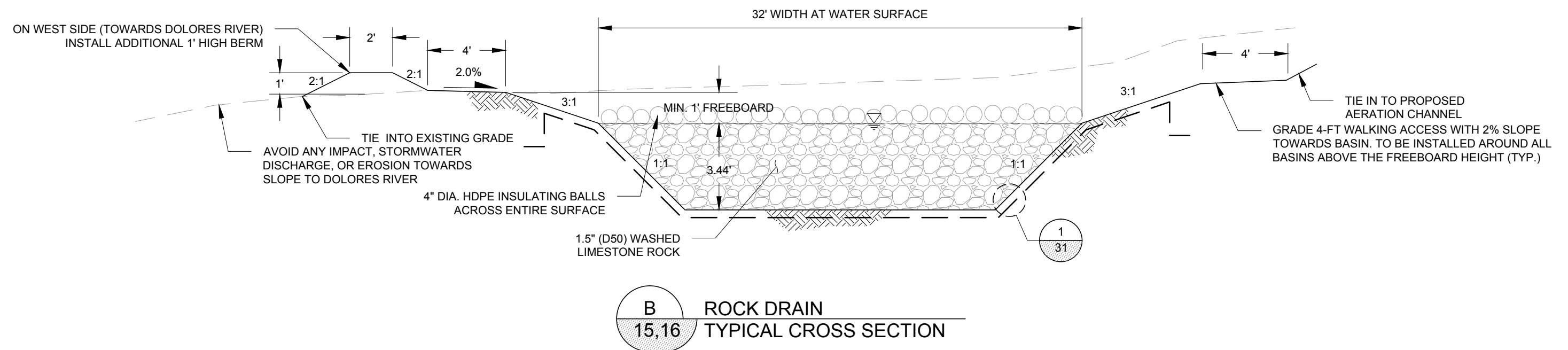
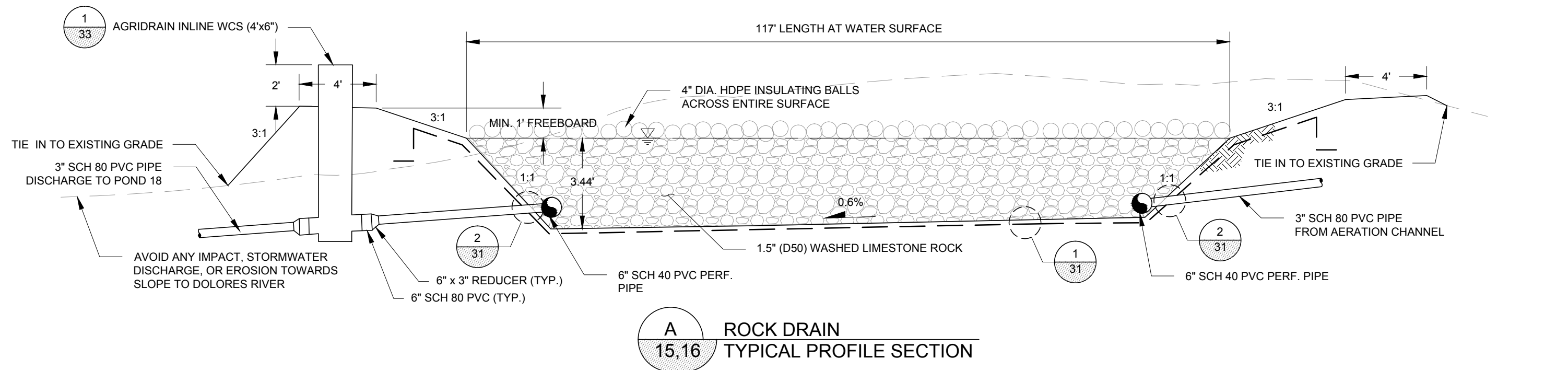


**3**  
15,20,27  
**AERATION CHANNEL OUTLET STRUCTURE**  
PLAN VIEW



**A**  
28  
**AERATION CHANNEL OUTLET STRUCTURE**  
PROFILE VIEW

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ ARC				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		SHEET: 28 OF 38			
					REVIEWED _____ RJB		AERATION CHANNEL DETAILS		PROJ No:	28
									SA11161315	
DATUM										



REFERENCES: PLANS  DATUM	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ KF				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF				SHEET: 29 OF 38	
					REVIEWED _____ RJB					
							ROCK DRAIN SECTIONS		PROJ No: SA11161315	29

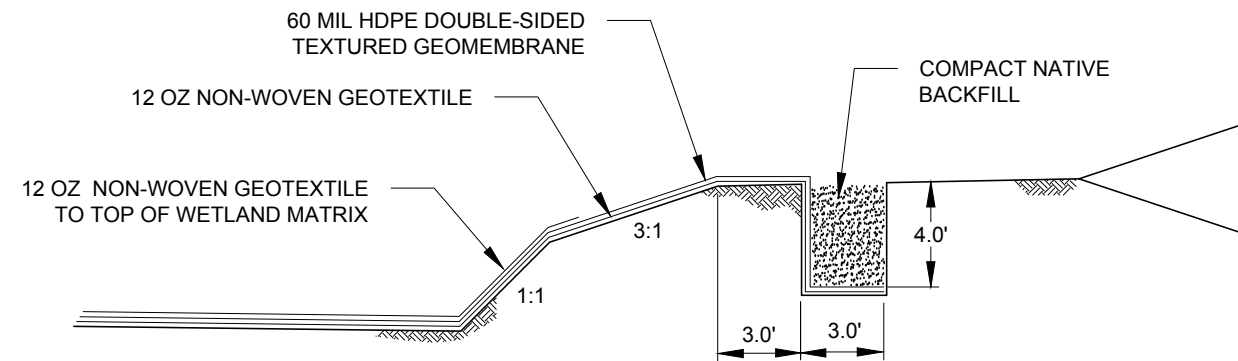




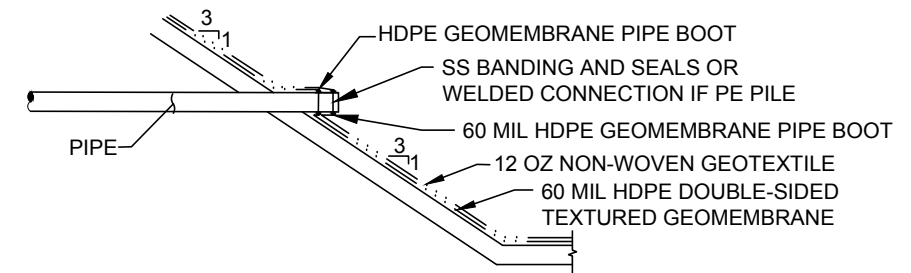
REFERENCES: PLANS  DATUM	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ ARC				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		SHEET: 30 OF 38			
					REVIEWED _____ RJB		ROCK DRAIN DETAILS  PROJ No: 30 SA11161315			

Plot Date: 06/28/13 - 1:41pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: Rock Drain details.dwg

Plot Date: 06/28/13 - 1:42pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Sections.dwg

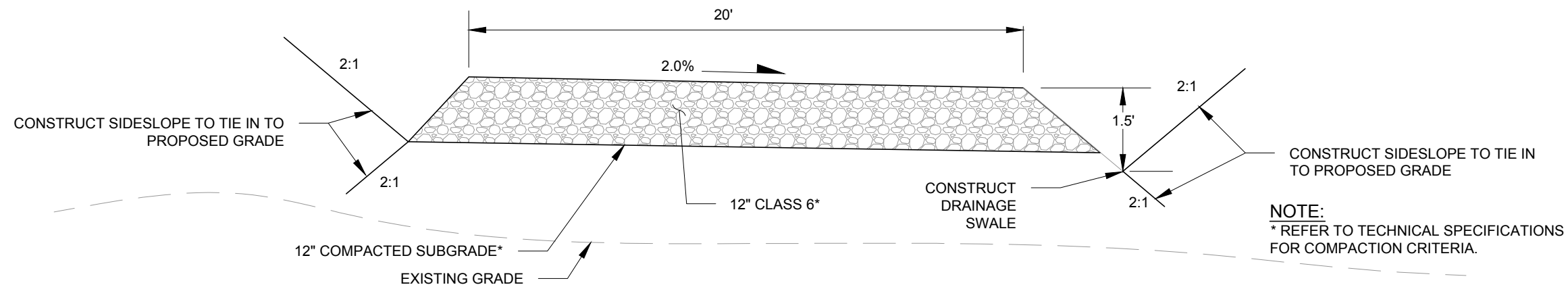


1  
22,23,24,25,26,27,29,30,32  
LINER DETAIL



- NOTES:
- 1) PANELS AROUND PIPING PENETRATIONS OR OTHER PROJECTIONS THROUGH THE PANEL SHOULD BE CUT WITH ROUNDED CORNERS TO PREVENT TEAR PROPAGATIONS.
  - 2) ALL GEOMEMBRANE BOOTS AND SHROUDS SHOULD BE OF THE SAME MATERIAL AND THICKNESS AS THE GEOMEMBRANE SPECIFIED FOR THE PROJECT.
  - 3) ALL BOOTS SHOULD FIT SNUGLY WITHOUT WRINKLES OR 'FISHMOUTHS'

2  
22,23,24,25,29  
PIPE PENETRATION DETAIL

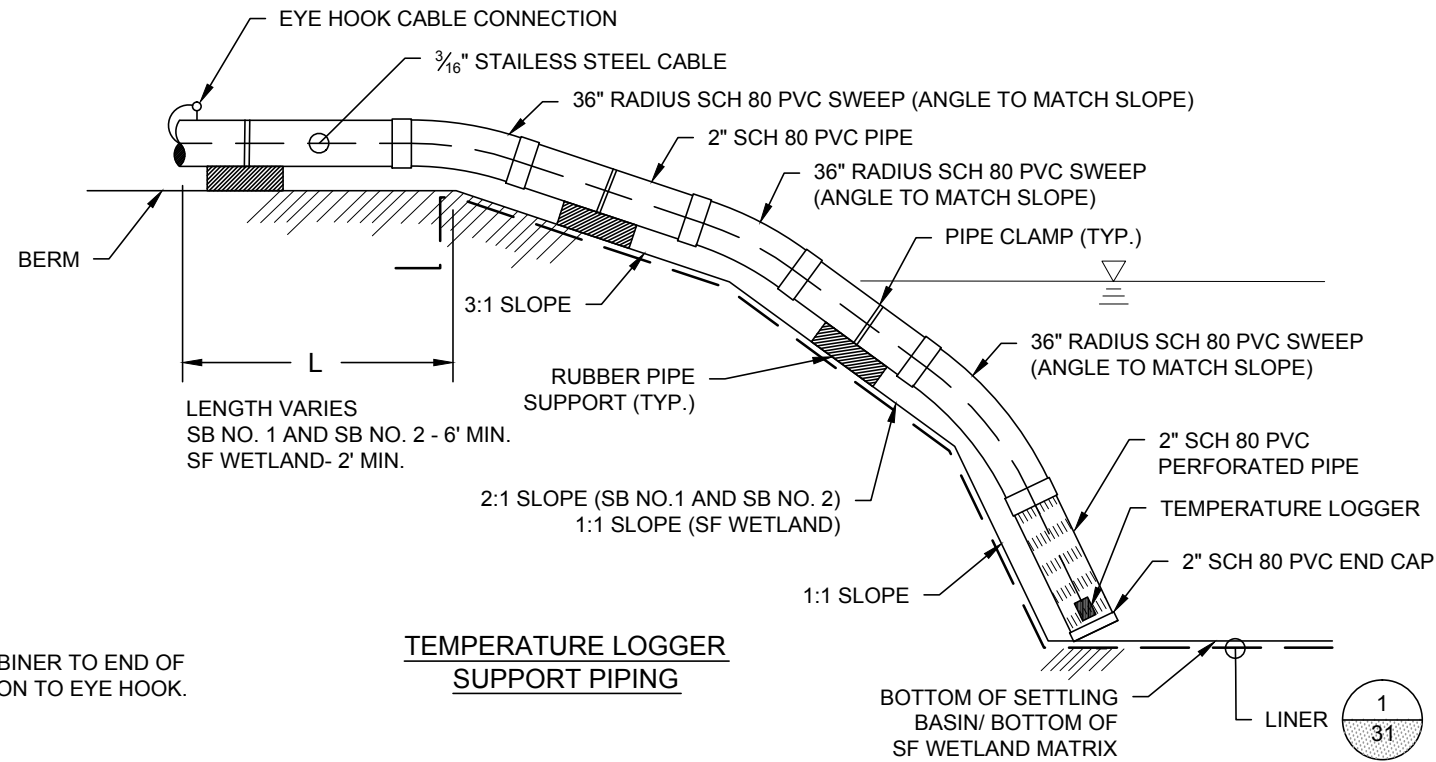


A  
18  
TREATMENT SYSTEM ACCESS ROAD  
TYPICAL SECTION

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC	 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF				SHEET: 31 OF 38	
					REVIEWED	RJB		SECTIONS AND DETAILS SHEET (SHEET 1 OF 6)		PROJ No:	31
										SA11161315	

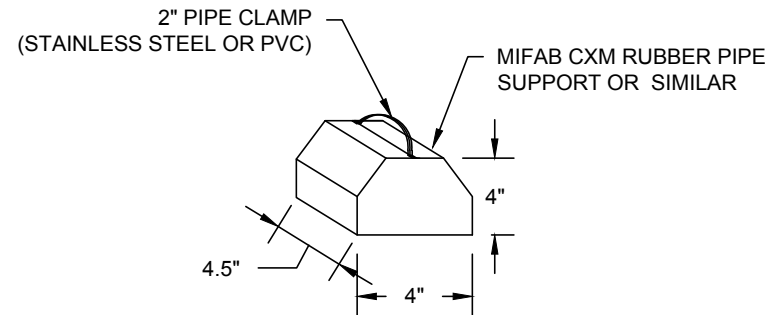


Plot Date: 06/28/13 - 1:42pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Detail Sheet.dwg



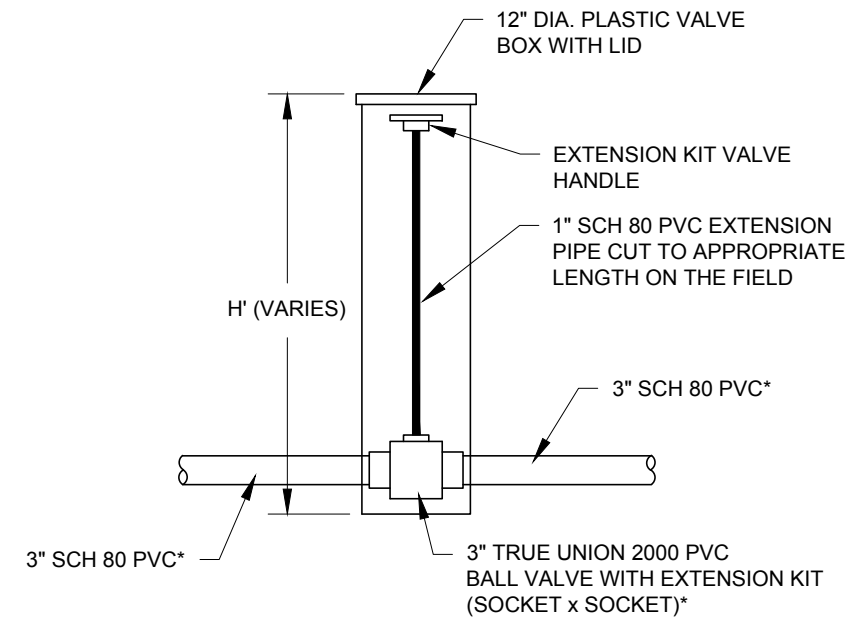
**NOTE:**  
1. SWEDGE SMALL CARABINER TO END OF CABLE FOR CONNECTION TO EYE HOOK.

**TEMPERATURE LOGGER  
SUPPORT PIPING**



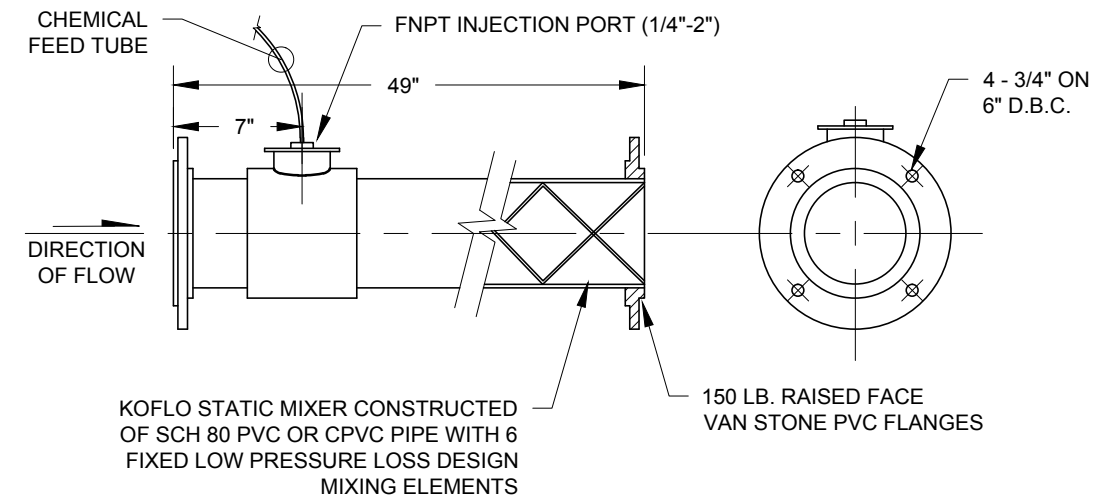
**RUBBER PIPE SUPPORT**

**1  
9,10,12,13** **TEMPERATURE LOGGER  
INSTALLATION DETAIL**



\* TO BE 4" SCH 80 PVC AND 4" BALL VALVE DOWNSTREAM OF SSF WETLAND.

**2  
10,11,13,14,15,17,20,21,22,23** **BALL VALVE WITH EXTENSION KIT  
AND VALVE BOX WITH LID DETAIL**



**3  
12,20** **STATIC MIXER DETAIL**

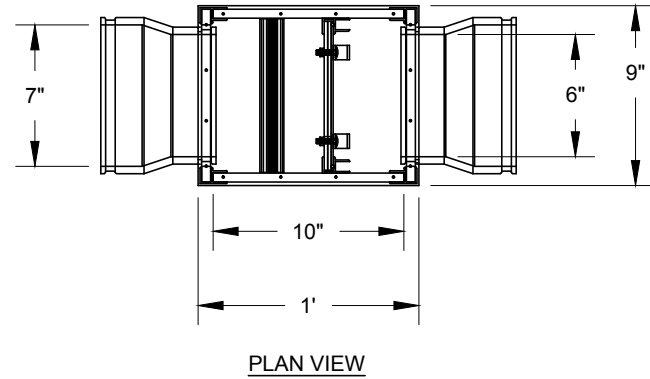
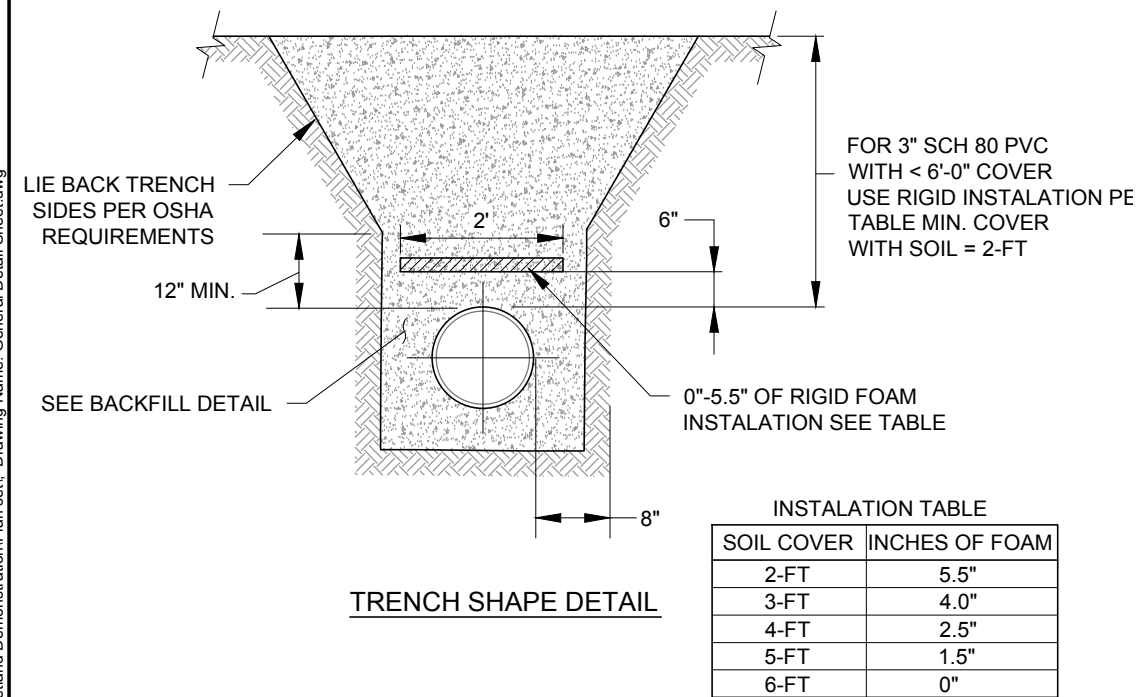
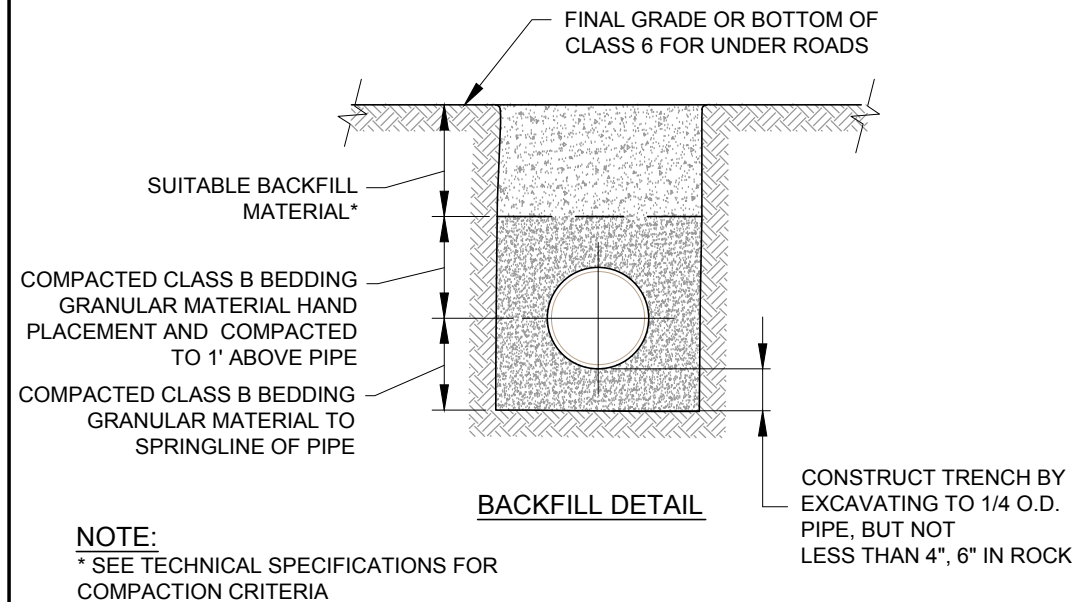
REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	KF
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF
					REVIEWED	RJB
DATUM						

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RICO - ARGENTINE MINE SITE  
CONSTRUCTED WETLAND DEMONSTRATION  
**SECTIONS AND DETAILS SHEET  
(SHEET 2 OF 6)**

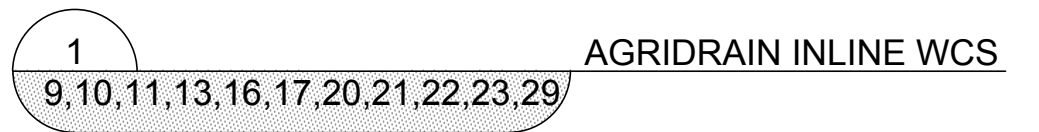
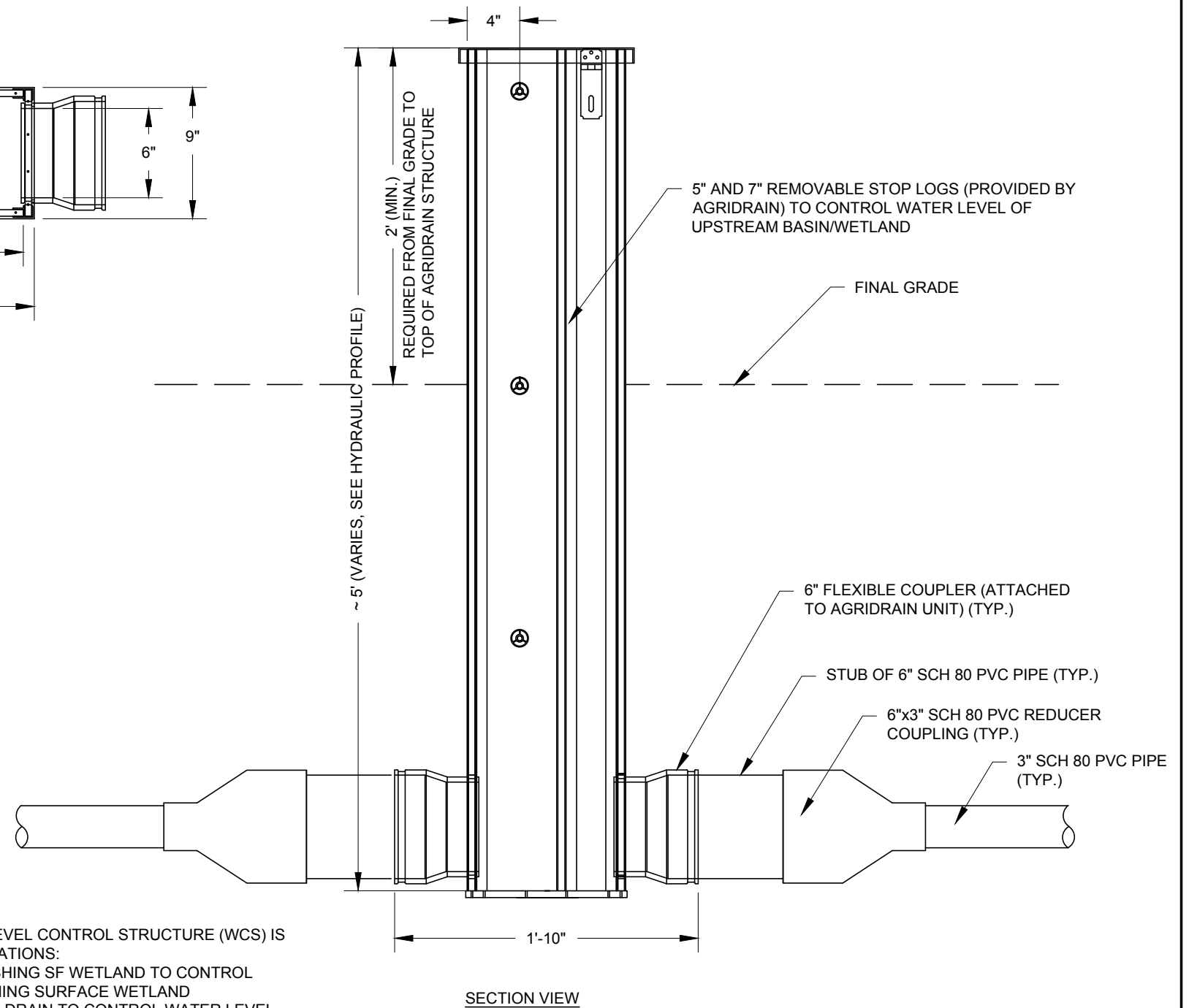
DATE: 05/31/13  
SCALE: NTS  
SHEET: 32 OF 38  
PROJ No:  
SA11161315 **32**

Plot Date: 06/28/13 - 1:42pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Detail Sheet.dwg



- NOTES:  
THE AGRIDRAIN INLINE WATER LEVEL CONTROL STRUCTURE (WCS) IS TO BE INSTALLED IN (5) FIVE LOCATIONS:
1. DOWNSTREAM OF THE POLISHING SF WETLAND TO CONTROL WATER LEVEL IN THE POLISHING SURFACE WETLAND
  2. DOWNSTREAM OF THE ROCK DRAIN TO CONTROL WATER LEVEL IN THE ROCK DRAIN
  3. DOWNSTREAM OF THE SF WETLAND TO CONTROL WATER LEVEL IN THE SF WETLAND
  4. DOWNSTREAM OF THE SB NO. 1 TO CONTROL WATER LEVEL IN SB NO. 1
  5. DOWNSTREAM OF THE SB NO. 2 TO CONTROL WATER LEVEL IN SB NO. 2

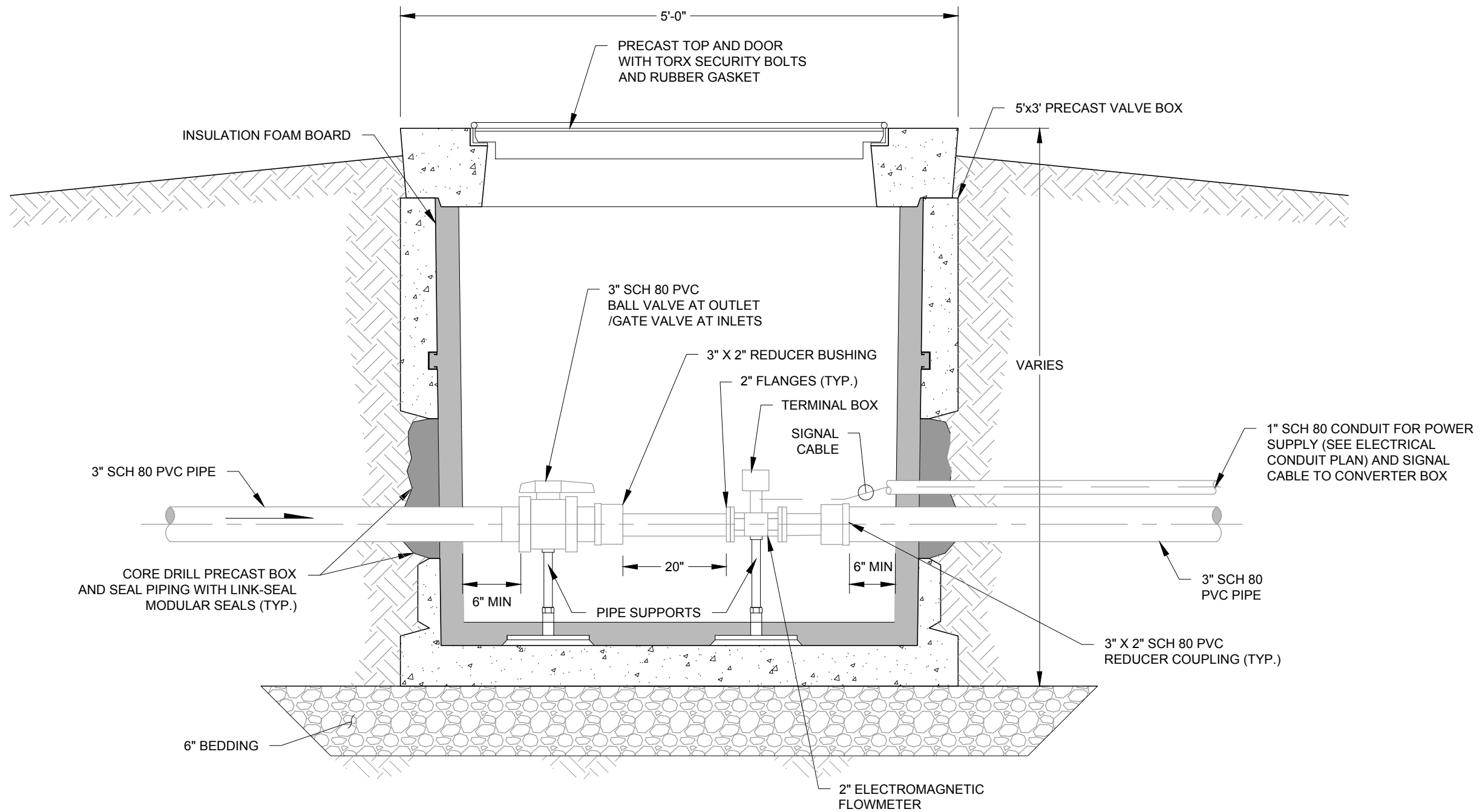
THE AGRIDRAIN INLET INCLUDES ONLY THE INLET PIPE. THIS UNIT IS PROPOSED UPSTREAM OF THE AERATION CHANNEL. SEE AERATION CHANNEL INLET DETAIL.



REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN	MGC	 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	ARC				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF				SHEET: 33 OF 38	
					REVIEWED	RJB		SECTIONS AND DETAILS SHEET (SHEET 3 OF 6)		PROJ No:	33
DATUM										SA11161315	



Plot Date: 06/28/13 - 1:42pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Detail Sheet.dwg



**NOTES:**

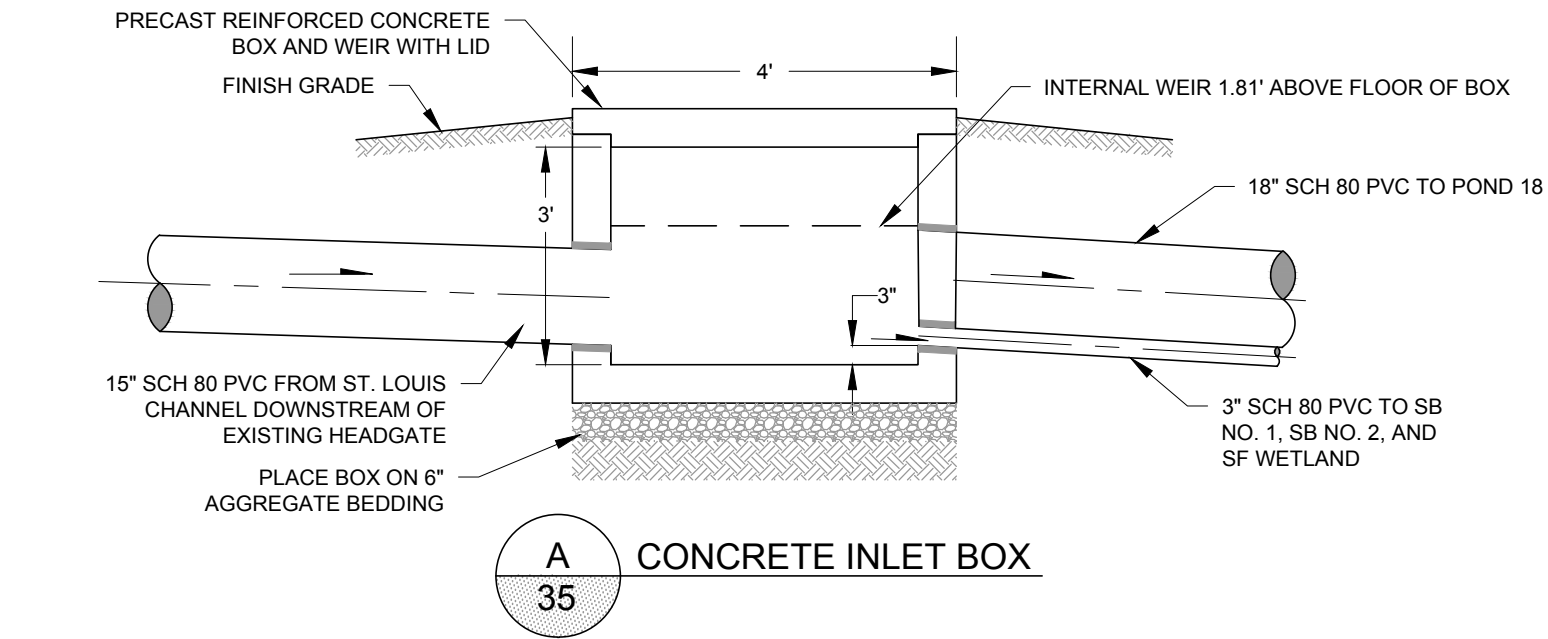
1. GATE VALVE TO BE INSTALLED WITH INFLUENT FLOWMETERS. BALL VALVE TO BE INSTALLED WITH EFFLUENT FLOWMETERS.
2. THE MINIMUM STRAIGHT PIPE LENGTH REQUIRED UPSTREAM OF THE INFLUENT FLOWMETERS 14-INCHES AND DOWNSTREAM OF THE FLOWMETER IS 4-INCHES.
3. FOR PIPE ELEVATION SEE HYDRAULIC PROFILE.

1 VALVE BOX DETAIL  
9,10,12,16,20,21

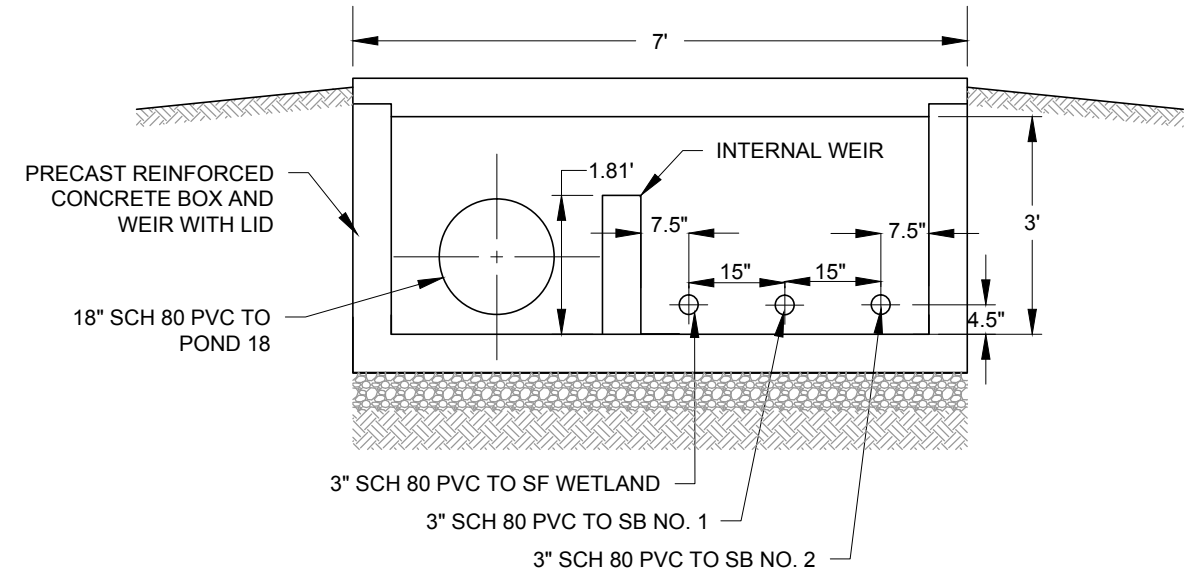
REFERENCES:		NO.	REVISION	DATE	APRVD	DRAWN	MGC	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
PLANS		1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED	ARC			SCALE: NTS	
DATUM		2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED	CBF	SECTIONS AND DETAILS SHEET (SHEET 4 OF 6)		SHEET: 34 OF 38	
						REVIEWED	RJB			PROJ No: SA11161315	
										34	

**amec**  
10670 White Rock Road, Suite 100  
Rancho Cordova, CA 95670  
(916) 636-3200

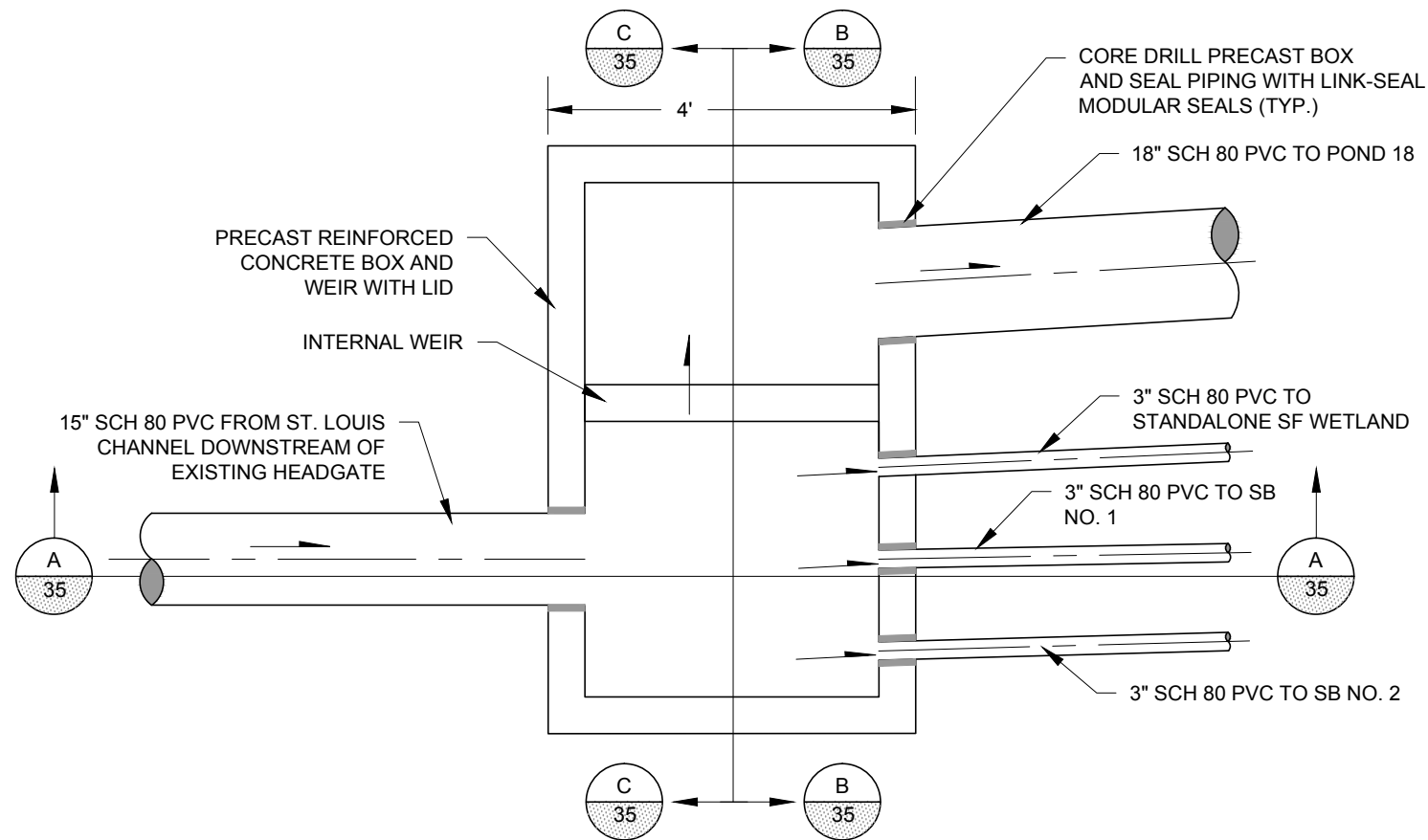
Plot Date: 06/28/13 - 1:42pm, Plotted by: mark.crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\, Drawing Name: General Detail Sheet.dwg



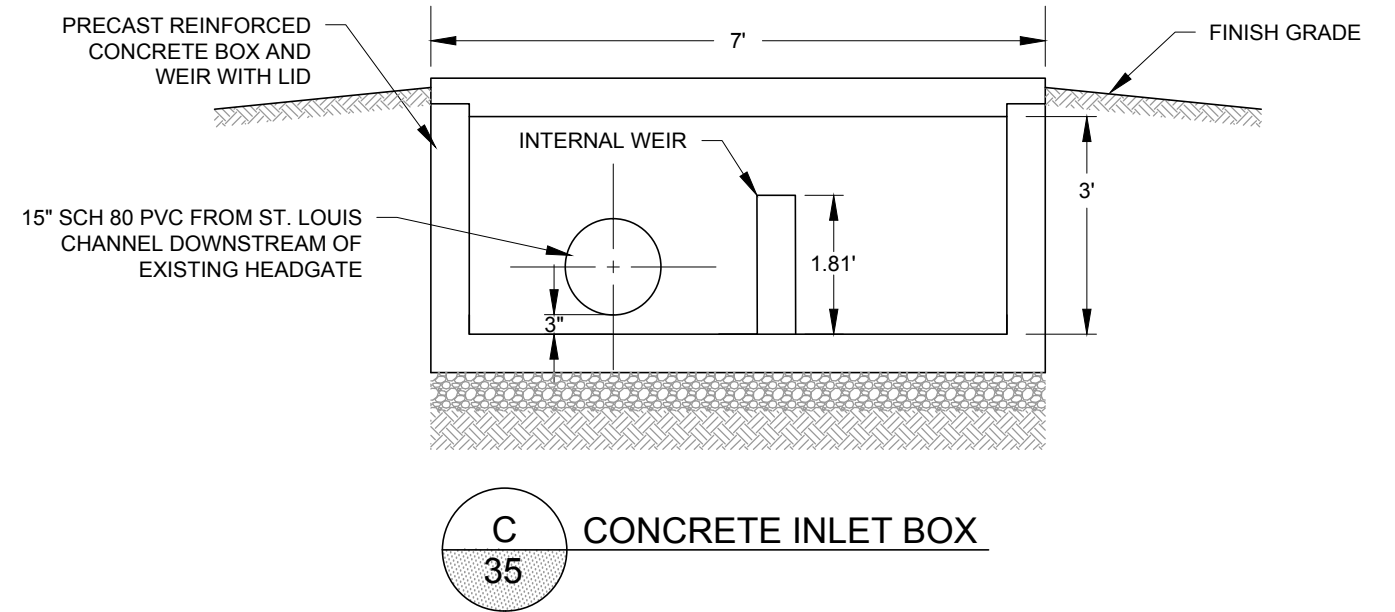
**A**  
35  
CONCRETE INLET BOX



**B**  
35  
CONCRETE INLET BOX



**C**  
35  
CONCRETE INLET BOX

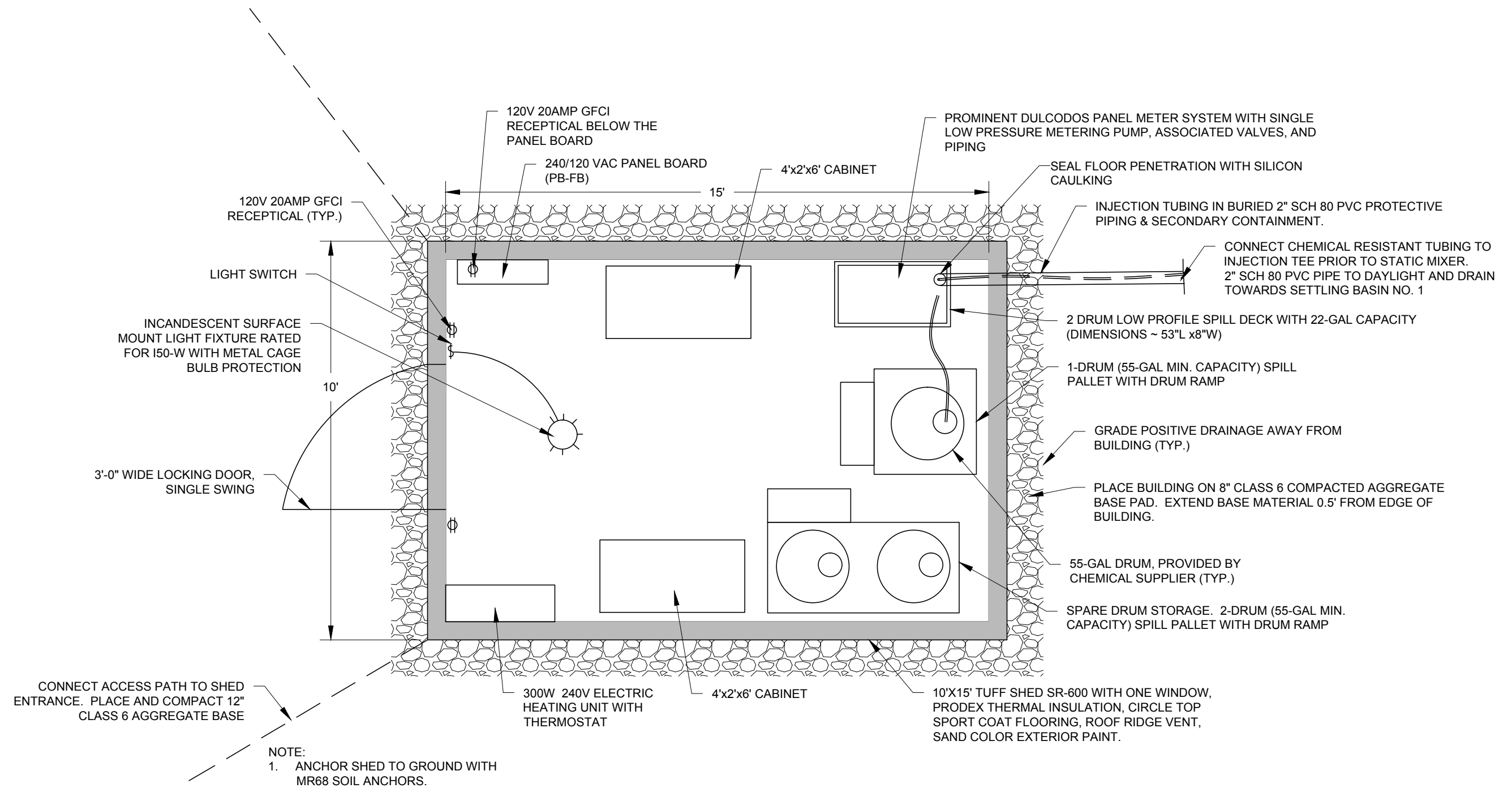


**C**  
35  
CONCRETE INLET BOX

**1**  
10,20,21  
CONCRETE FLOW DIVERSION BOX  
PLAN VIEW

NOTE:  
1. ALL INVERTS IN AND OUT ARE 8840.00.

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN_____MGC	<div> 10670 White Rock Road, Suite 100 Rancho Cordova, CA 95670 (916) 636-3200</div>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED_____KF		SCALE: NTS			
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED_____CBF		SHEET: 35 OF 38			
					REVIEWED_____RJB					
DATUM							SECTIONS AND DETAILS SHEET (SHEET 5 OF 6)		PROJ No: SA11161315	35



1  
12,17

REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ ARC				SCALE: NTS	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		SHEET: 36 OF 38			
					REVIEWED _____ RJB					
DATUM							SECTIONS AND DETAILS SHEET (SHEET 6 OF 6)		PROJ No: SA11161315	36



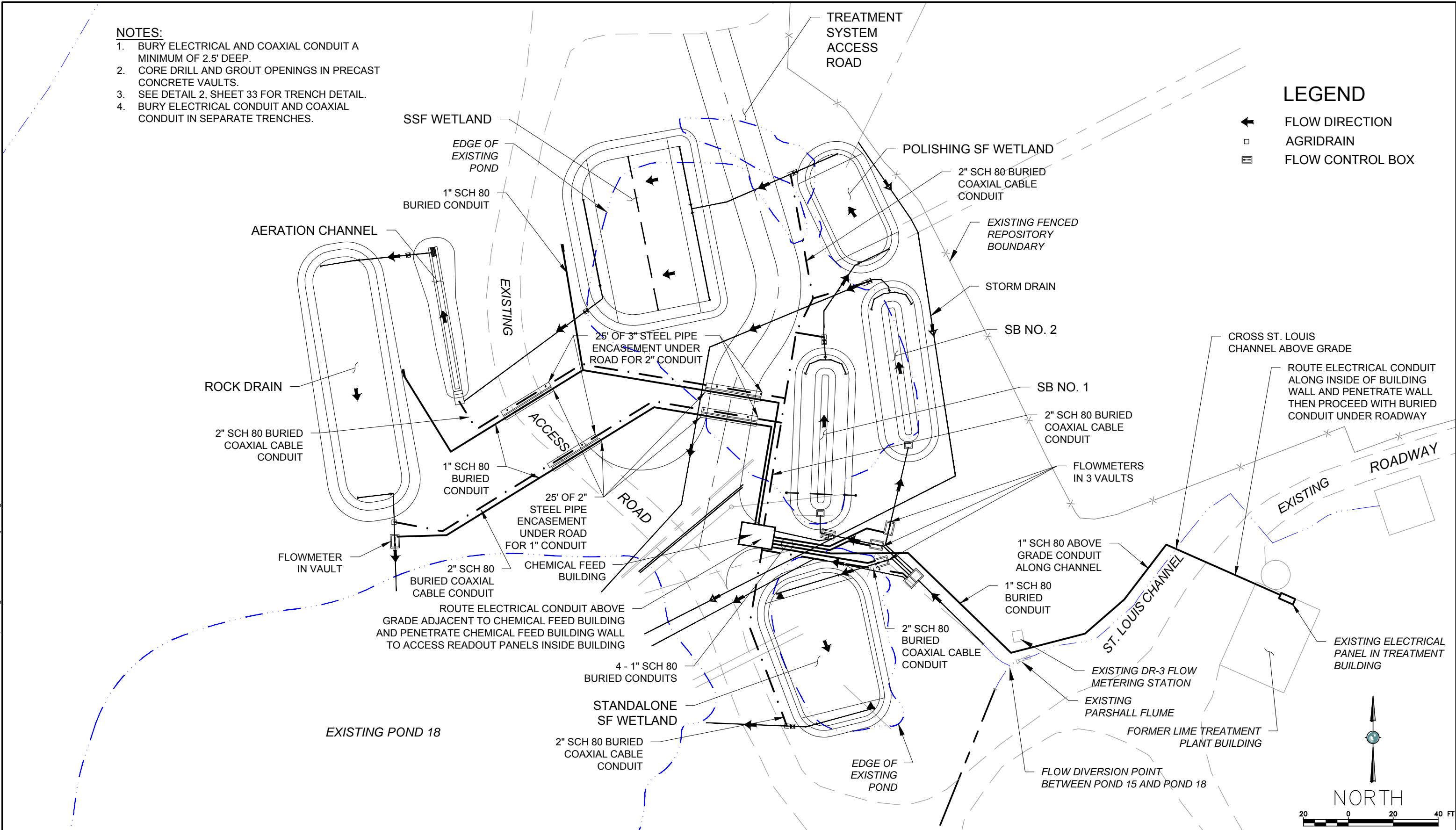
NOTES:

1. BURY ELECTRICAL AND COAXIAL CONDUIT A MINIMUM OF 2.5' DEEP.
2. CORE DRILL AND GROUT OPENINGS IN PRECAST CONCRETE VAULTS.
3. SEE DETAIL 2, SHEET 33 FOR TRENCH DETAIL.
4. BURY ELECTRICAL CONDUIT AND COAXIAL CONDUIT IN SEPARATE TRENCHES.

LEGEND

- ← FLOW DIRECTION  
□ AGRIDRAIN  
▤ FLOW CONTROL BOX

Plot Date: 06/28/13 - 1:42pm. Plotted by: mark crater  
Drawing Path: P:\Project\RICO - SA11161301\2013\CAD\Wetland Demonstration\Plan set\ Drawing Name: Electrical Layout.dwg



REFERENCES: PLANS	NO.	REVISION	DATE	APRVD	DRAWN _____ MGC	 <b>10670 White Rock Road, Suite 100</b> <b>Rancho Cordova, CA 95670</b> <b>(916) 636-3200</b>	RICO - ARGENTINE MINE SITE CONSTRUCTED WETLAND DEMONSTRATION		DATE: 05/31/13	
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ KF				SCALE: 1" = 40'	
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF		SHEET: 37 OF 38			
					REVIEWED _____ RJB					
DATUM							ELECTRICAL CONDUIT PLAN		PROJ No:	37
								SA11161315		



NAME:		PB-FB		BUS:		COPPER				MAIN BREAKER:		2P-30A	
SERVICE		120/240 VAC		RATING:		100A				LOCATION:		FLOC BUILDING	
MOUNTING		SURFACE, NEMA 1											
V.A.		LOAD		PHASE	BREAKER	CIRCUIT NUMBER		BREAKER	PHASE	LOAD		V.A.	
A	B											A	B
1000		CHEMICAL FEED METERING SYSTEM GFCI RECEPTACLE (NOTE 4)		1	20	1	2	20	2	HEATER (NOTE 1)		1500	
	1800	GFCI BUILDING RECEPTACLES (NOTE 3)		1	20	3	4	20	2	HEATER (NOTE 1)			1500
100		LIGHT (NOTE 2)		1	15	5	6	20	1	SPARE			
	400	FLOWMETERS 24 VDC POWER PANEL (NOTE 6)		1	15	7	8						
						9	10						
						11	12						
1100	2200	TOTALS PER PHASE PER SIDE										1500	1500
2600	3700	TOTALS PER PHASE											
	6300	PANEL TOTAL											



**BROWNS HILL**  
ENGINEERING & CONTROLS

REFERENCES: PLANS  DATUM	NO.	REVISION	DATE	APRVD	DRAWN _____ CAS
	1	ISSUED FOR REVIEW	05/31/13	STA	DESIGNED _____ CAS
	2	ISSUED FOR CONSTRUCTION	06/28/13	STA	CHECKED _____ CBF
					REVIEWED _____ RJB

DATE: 05/31/13	
SCALE: NTS	
SHEET: 38 OF 38	
PROJ No: SA11161315	38